

The ECONOMICS *of*
PUBLIC UTILITY
REGULATION

IRSTON R. BARNES



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To
WINTHROP MORE DANIELS

PREFACE

The title, *The Economics of Public Utility Regulation*, suggests the scope of the present undertaking. The economic objectives, the economic aspects, and the economic consequences of regulation constitute the focus of attention, and guide both the selection of topics for consideration and their discussion. Limitations of space have prevented a consideration of all regulatory agencies, of all public utilities, or of all the problems of regulation. The more active state public service commissions, the Securities and Exchange Commission, and the Federal Power Commission, and the federal, rather than the state, courts have provided most of the materials for this study. The electric, gas, telephone, and water utilities have been the objects of chief public concern and have given rise to the more compelling occasions for the exercise of governmental control; the transportation services present distinct problems that have made it inexpedient to treat those aspects of control which are peculiar to these services.

Following a consideration of the legal basis of regulation, the economic characteristics of public utilities, and the nature and organization of regulatory agencies, the discussion concentrates on certain critical regulatory problems—the control of rates, pricing problems, the determination of the rate base, operating expenses, security issues and capitalizations, and intercorporate relations; the regulation of service, franchises, accounting, hydroelectric developments, and the interstate transmission of electricity and gas are dealt with more briefly. Municipal ownership and operation are considered in relation to the newer forms of public ownership—the public utility districts, the power co-operatives, and the federal projects; and the relation of the various forms of public ownership to the regulation of privately owned utilities is recognized. Although the work is primarily concerned with the economic phases of regulation, no attempt is made to express a strictly quantitative judgment of the effect of this or that policy on the public utility industries; indeed, such an attempt would be futile where many dynamic factors—the growth of communities, the rise and decline of industries, changes in consumers' habits, rising and falling standards of living, and other manifestations of the business cycle—have far outweighed the significance of regulation in conditioning the progress of these industries.

The regulation of public utilities has always been a source of controversy, a battle ground of politics and contentious opinions. These political and controversial matters are unavoidable, and in the discussion herein, there is no justification for an artificial simplification of the problem to the point where the controversy disappears in abstractions or empty generalizations, or for a mere balance-sheet presentation of the arguments of opposing interests. In the following pages there has been no attempt to evade judgments relative to controversial issues, but there has also been a conscientious attempt to present the considerations, factual and otherwise, on which each conclusion is rested, so that those in dissent may have an adequate basis for weighing any conclusion or arriving at a divergent judgment.

It is the author's conviction that the economics of public utility regulation can best be taught to college students on the basis of discussions and reports and that the "case method" offers the most promise of developing significant class discussions. The present undertaking has, therefore, sought not only to produce a textbook that will meet all the needs of the instructor who prefers the conventional methods of teaching, but also to provide the essential background materials for the instructor who prefers to pursue the more difficult and rewarding case technique. The attainment of this dual objective has sometimes dictated a fuller discussion of certain phases of the subject than would otherwise be required.

The book contains the usual tools to enhance its usefulness to the student and the specialist. A subject outline of the contents presents the interrelation of the parts to the whole. There is a Bibliography which lists some of the readily available source materials, the general texts, the case books, and a selected list of readings for each chapter; but no cross references are provided to parallel chapters in other general texts, for these texts are so prepared that even the new student can easily find the corresponding readings. Limitations of space have confined the bibliography to the more recent and more accessible of the monographs and periodical articles. A reference to the list of periodicals and the periodical guides will enable the reader to discover further articles on any phase of the subject. A Table of Cases follows the Bibliography. There is, of course, a Subject Index.

It is pleasant to record my gratitude for the assistance so generously given by numerous friends. My chief obligation is to Professor Winthrop M. Daniels, who first interested me in the problems of public utility regulation and who persuaded me to embark on this undertaking. Mr. Joel B. Dirlam has read the entire manuscript; his criticisms have been most valuable, and in addition he has supplied helpful suggestions in the preparation of certain sections of the work. Professor Emanuel Stein has also read the manuscript and offered helpful criticisms. Mr. Richard W. Dittmer has been of particular aid in the survey of the state statutes with respect to security regulation, intercorporate relations, and public ownership. Messrs. Franklin M. Schultz and William R. Hellmuth, Jr., have assisted in the research and in the assembling of statistical materials. Mr. John H. Stubbs has cheerfully undertaken the laborious task of verifying all quotations and citations to cases and statutes. Others too numerous to name have assisted in the mechanics of preparing the manuscript for the publisher; their labors have been much appreciated.

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CHAPTER I

THE PUBLIC UTILITY CONCEPT

I. THE PROBLEM

WHAT IS A PUBLIC UTILITY? Attempts at a general definition of a public utility have usually resulted in nothing more than a description of those industries that are already recognized as appropriate objects of a particular scheme of regulatory control. The concept is legal in its origins and usages, but it applies to a combination of economic and social (and perhaps political) facts. Those industries are public utilities which are required to render service at reasonable and nondiscriminatory prices to all who apply for it. The measure of regulation thought necessary to insure universal service at reasonable prices will differ widely from one industry to another, but it characteristically begins with prescribing standards of service and price.

THE PROCEDURE IN THE DESIGNATION OF PUBLIC UTILITIES. Three stages are ordinarily involved in the designation of a business or industry as a public utility. The first step is a mobilization of public opinion in support of a program to impose more stringent duties and responsibilities on the industry. The first stage may persist for years, and may be accompanied by governmental investigations into the conduct and activities of the industry and by the injection of the issue into political campaigns. The second stage is concerned with the formal preparation of a program of control and its enactment into law by the legislature. This involves a definition of the standards of regulation, the objectives to be sought, and the selection of the methods and agencies for administering the controls. Since, under our system of government, the will of the legislature is not supreme, the final stage is judicial review: the courts interpret the enactments of the legislature, and ultimately decide whether the legislation is consonant with constitutional principles as conceived by the judiciary.

THE PROBLEM. Two questions arise at the very threshold of regulation. What are the characteristics—economic, social and legal—which lead legislatures to impose the controls characteristic of public utility regulation? And what factors explain why courts have been willing to sustain and enforce regulatory controls in one industry while refusing to do so with respect to another?

The decisions of the courts have been couched in terms of the protection of constitutional rights: if the regulation was upheld, the business was said to be "affected with a public interest" and the regulation was a valid exercise of the "police power." If, on the contrary, the courts found that the business was not "affected with a public interest," the regulation was said to be an invalid exercise of the police power, and was held to contravene the due-process clause (either the Fifth or Fourteenth Amendment) of the constitution.

2. THE DEVELOPMENT OF THE CONCEPT

Sixty years of decision and dictum by the Supreme Court went into the building of a constitutional test around the concept of business "affected with a public interest." The language of the constitution prohibits a state from depriving "any person of life, liberty or property without due process of law."¹ Several intermediate links had to be forged before the due-process clause could be successfully invoked to stay state legislation aimed at the correction of faults in the economic system: a substantive meaning had to be grafted onto the procedural, so that due process came to apply to the thing taken as well as to the method of the taking: "rights"—especially freedom of contract and the prospect of future income—had to be assimilated to the concept of "property"; and the corporation had to become a "person" entitled to protection under the due-process clauses.²

THE AMERICAN BEGINNINGS—*MUNN v. ILLINOIS*. The American origins of the concept of businesses "affected with a public interest" are to be found in Mr. Chief Justice Waite's decision in the case of *Munn v. Illinois*.³ As one response to the pressures of the Granger movement, the Illinois constitution of 1870 contained a provision designating grain elevators as public warehouses, and in the following year the legislature adopted a statute prescribing the maximum charges to be exacted by elevators. Munn and Scott, operators of grain elevators in Chicago, charged rates higher than those prescribed by the statute (the rates were fixed by agreement among the grain operators of the district), and in other respects failed to comply with the law. Having been found guilty and fined in the state courts, they appealed to the federal Supreme Court, where their attorney argued that the due-process clause required that the State of Illinois be denied authority to regulate their business. The argument ran to the effect that, interpreted in the light of the common law, the due-process clause limited the regulative power of the legislature to businesses "affected with a public interest"; Lord Hale's treatise, *De Portibus Maris*, was cited as the authority on the common law and businesses "affected with a public interest"; and since grain elevators were nowhere included in Lord Hale's enumeration of businesses "affected with a public interest," it was argued that the grain elevator was a private business, the regulation of which would constitute a taking of property in violation of the due-process clause.⁴

¹ Fourteenth Amendment. The Fifth Amendment imposes a similar restraint upon the federal government.

² See Hamilton, "Affection with Public Interest," 39 *Yale Law Jour.* 1089-1112 (1930)—a most illuminating and suggestive analysis of the Supreme Court's decisions on this subject, one to which this treatment is much indebted.

The evolution of these propositions may be traced in the following cases: *The Slaughter House Cases*, 83 U.S. 36 (1873); *Davidson v. New Orleans*, 96 U.S. 97 (1877); *San Mateo County v. Southern Pacific Ry.*, 13 Fed. 722 (C.C.D. Cal., 1882); *Butchers' Union v. Crescent City Landing Co.*, 111 U.S. 746 (1884); *Santa Clara County v. Southern Pacific R.*, 118 U.S. 394, 404 (1886); *Mugler v. Kansas*, 123 U.S. 623 (1887); *Chicago, M. & St. P. Ry. v. Minn.*, 134 U.S. 418 (1890); *Allgeyer v. Louisiana*, 165 U.S. 578 (1897); *Adair v. U.S.*, 208 U.S. 161 (1908).

³ 94 U.S. 113-154 (1877).

⁴ Lord Hale's death came in 1676, and his treatise, *De Portibus Maris*, was presumably written shortly before his death, but the manuscript was not published until 1776. Though there is a

The Court could find no objection to the Illinois statutes either as an interference with interstate commerce or as a deprivation of private property. Confining itself to the question of power rather than expediency, the Court held that the character of the business was such as to justify regulation by the legislature, and that the importance of the grain trade and the strategic position of the elevators with reference to grain movements were sufficient to support the assertion of the legislative power; in the language of the opinion, "they stand . . . in the very 'gateway of commerce,' and take toll from all who pass."⁵ Regarding the "due-process clause" of the Fourteenth Amendment historically, Mr. Chief Justice Waite could find therein no basis for interpreting price-fixing legislation as effecting an unconstitutional interference with private property. Indeed, it was pointed out that the police power had always been exercised to regulate "the use, or even the price of the use, of private property" when necessary for the public good. No distinction between the regulation of the price of a service and other regulations of the use of property was recognized.

The framing of the "affected-with-a-public-interest" concept was quite fortuitous, for it was in no way essential to the decision reached by the Court. With great impartiality, Mr. Chief Justice Waite accepted the argument offered by the plaintiffs, but gave the decision to the state. As used in the opinion, however, the expression was little more than a generalization to the effect that under the police power the legislature possessed the power to regulate any business in which the whole public had a direct interest; there was no attempt to create a technical test of when the legislative power might be asserted. The oft-quoted dictum that became precedent runs as follows:

"This brings us to inquire as to the principles upon which this power of regulation rests, in order that we may determine what is within and what without its operative effect. Looking, then, to the common law, from whence came the right which the Constitution protects, we find that when private property is 'affected with a public interest, it ceases to be *juris privati* only.' This was said by Lord Chief Justice Hale more than two hundred years ago, in his treatise *De Portibus Maris*, 1 Harg. Law Tracts, 78, and has been accepted without objection as an essential element in the law of property ever since. Property does become clothed with a public interest when used in a manner to make it of public consequence, and affect the community at large. When, therefore, one devotes his property to a use in which the public has an interest, he, in effect, grants to the public an interest in that use, and must submit to be controlled by the public for the common good, to the extent of the interest he has thus created. He may withdraw his grant by discontinuing the use; but, so long as he maintains the use, he must submit to the control."⁶

Thus in Lord Hale's words of two centuries earlier was found support for the proposition that the legislature has the right, under the police power, to

reference to the treatise in 1837 (*Charles River Bridge v. Warren Bridge*, 36 U.S. 420), the phrase, "affected with a public interest," does not become current until the argument of the *Munn* case in 1876.

⁵ 94 U.S. 113, 132.

⁶ *Ibid.*, 125-126.

regulate any business in which the public has an essential interest. This liberal construction of the police power was challenged by Mr. Justice Field, who found in the asserted power to regulate price a real deprivation of property contrary to the constitutional rights of private property. In dissenting, he argued that the exercise of the police power should be confined to securing the "peace, good order, safety, and health of the community."⁷

The next thirty-seven years were occupied with the germination of the public-interest concept; and although its development was unexciting, opportunities were presented for the extension of its roots deep into the American legal tradition. Although the recognition of the right to regulate grain elevators had been predicated upon their strategic position in the Chicago area, the precedent, once established, sanctioned the extension of regulatory control over other elevators not enjoying similar monopoly advantages.⁸ The regulation of railroad rates was before the Court at the time that *Munn v. Illinois* was under consideration.⁹ The economic necessities for the regulation of railroads were compelling: extravagant rates, personal and local discriminations, and indifference to the desires of the public had made the railroad problem notorious. Though it was possible to find precedents for railroad regulation in the English law relating to "common carriers" or in the doctrine that the privileges conferred on the railroads by the governments implied a contractual right to follow privileges with regulation, the Court chose to use the public-interest doctrine to uphold these controls.¹⁰

FROM PROPERTY TO BUSINESS—THE GERMAN ALLIANCE INSURANCE CASE. The second major stride in the evolution of the public-interest concept occurred in 1914.¹¹ The state of Kansas undertook to regulate the fire insurance business; and in 1909, the superintendent of insurance ordered a 12 per cent reduction in insurance premiums.

The German Alliance Insurance Company appealed to the courts, contending that fire insurance was a private business beyond the regulatory power of the state.¹² It argued that the business was a natural right which was in no way dependent upon the receipt of special privileges from the state; that there was no property (in the physical sense) that could be said to be devoted to a public use; and that the business was exclusively concerned with private and

⁷ *Ibid.*, 142-143, 146-147.

⁸ *Budd v. New York*, 143 U.S. 517 (1892); *Brass v. N.D.*, 153 U.S. 391 (1894).

⁹ It appears that Mr. Chief Justice Waite went beyond the briefs in the *Munn* case and examined the writings of Lord Hale. And it has been suggested that his positive formulation of the public-interest concept, instead of the simple rejection of the arguments of Munn's attorneys, which was all the situation demanded, was due to the necessity of considering the constitutionality of railroad rate regulation. See Keezer and May, *The Public Control of Business*, p. 124; and Hamilton, *op. cit.*, p. 1097.

¹⁰ *Munn v. Illinois*, 94 U.S. 113, 130 (1877); *Chicago, B. & Q. R. v. Iowa*, 94 U.S. 155 (1877); *Piek v. Chicago & N. W. R. Co.*, 94 U.S. 164 (1877).

¹¹ *German Alliance Ins. Co. v. Kansas*, 233 U.S. 389 (1914). This case found the Court closely divided: Mr. Justice McKenna delivered the majority opinion, with Justices Holmes, Day, Hughes, and Pitney concurring; Mr. Justice Lamar was supported in his dissent by Mr. Chief Justice White and Mr. Justice Van Devanter; Mr. Justice Lurton took no part in the decision.

¹² The company also argued that the rates were insufficient to cover the costs of its business, and that the statutory exemption of farmers' mutual fire insurance companies was a violation of the equal-protection clause of the Fourteenth Amendment.

personal contracts.¹³ Obviously, the business of insurance bore few of the external characteristics of the transportation, communications, and public utilities businesses which had been largely the objects of rate regulation in the past. Yet a realistic consideration of the nature of the business supported a regulation of insurance companies: fire insurance was a virtual necessity for every property owner; the cost of such insurance was a significant item of cost for the businessman, the farmer, or the individual property owner; low insurance rates encouraged the purchase of insurance, and the widespread use of the service added to the financial security of a community; and finally, the purchaser of insurance, negotiating for a necessity, had little or no influence on the price for the insurance rates were fixed by agreement among the underwriters. The limited scope of the earlier decisions, centering about the dedication of property to a public use, opposed a serious obstacle to the recognition of the power to regulate; but the economic necessities impelling the states toward a regulation of the insurance business were insistent.

With a fine appeal "against that conservatism of the mind which puts to question every new act of regulating legislation and regards the legislation invalid or dangerous until it has become familiar," Mr. Justice McKenna boldly asserted that no closed category circumscribed the scope of regulations in the public interest, but that a true understanding of the earlier decisions of the Court would "demonstrate that a business, by circumstances and its nature, may rise from private to be of public concern and be subject, in consequence, to governmental regulation."¹⁴ Any other interpretation, it was noted, would be tantamount to a holding that governments in the past had possessed greater power to recognize the public interest in a business and provide for appropriate regulation than the government of today possessed—a disastrous principle in a dynamic world.

For twenty years, the decision of the *German Alliance Insurance* case marked the farthest reach of the public-interest concept. The applications of the concept in the cases immediately subsequent to *Munn v. Illinois* had had the effect of narrowing the concept to meet the particular situation. Mr. Justice McKenna in effect returned to the broad proposition that the right to regulate depends upon the general character of the business and its relation to the public; property became less important, and the nature of the business, the essential factor. The decision constituted an invitation to the extension of regulatory authority wherever an essential public interest could be served.

THE WOLFF PACKING COMPANY CASE. With a change in the personnel of the Court, the restrictive possibilities inherent in the public-interest concept came to the fore, and a principle that had grown in influence as an instrument justifying the extension of legislative regulation into new economic fields became the tool for erecting successive limitations on the assertion of the police power.¹⁵ The regulations embodied in the Kansas Industrial Relations Act of 1920 were more far-reaching than any that had previously been before the

¹³ The legal arguments against the extension of regulation to insurance companies were admirably summarized in the dissenting opinion of Mr. Justice Lamar. (*Ibid.*, 424-427.)

¹⁴ *Ibid.*, 409, 411.

¹⁵ *Wolff Packing Co. v. Industrial Court*, 262 U.S. 522 (1923). The Court was unanimous.

Court. The statute declared that all businesses concerned with the manufacture or preparation of food, clothing, and fuel were affected with a public interest, and provided that in such businesses there should be compulsory arbitration of disputes involving wages and other conditions of employment. In such a proceeding, the Industrial Court imposed upon the Wolff Packing Company an increase in wages that amounted to over \$400 weekly, although the company had lost \$100,000 in the previous year's operations.

The fundamental question presented to the Court was whether the meat-packing industry, for purposes of wage fixing, was "affected with a public interest," or whether those engaged in the enumerated industries could be compelled "to continue in their business and employment on terms fixed by an agency of the state, if they cannot agree." In an attempt to enlighten and clarify the discussion Mr. Chief Justice Taft reviewed the significance which the Court had previously attached to the public interest category, and concluded that:

"Businesses are said to be clothed with a public interest justifying some public regulation may be divided into three classes:

"(1) Those which are carried on under the authority of a public grant of privileges which either expressly or impliedly imposes the affirmative duty of rendering a public service demanded by any member of the public. Such are the railroads, other common carriers and public utilities.

"(2) Certain occupations, regarded as exceptional, the public interest attaching to which, recognized from earliest times, has survived the period of arbitrary laws by Parliament or Colonial legislatures for regulating all trades and callings. Such are those of the keepers of inns, cabs, and gristmills. . . .

"(3) Businesses which though not public at their inception may be fairly said to have risen to be such and have become subject in consequence to some government regulation. They have come to hold such a peculiar relation to the public that this is superimposed upon them. In the language of the cases, the owner by devoting his business to the public use, in effect grants the public an interest in that use and subjects himself to public regulation to the extent of that interest although the property continues to belong to its private owner and to be entitled to protection accordingly. . . ." ¹⁶

A critical examination of this classification reveals that it falls short of being helpful for the present problem: it indicates what categories of business have been subjected to regulation, but provides no answer respecting possible extensions of the area of regulation by the legislatures or the factors which will lead the courts to sanction such regulation.

The desire to clarify his own classification led the Chief Justice to attempt a distinction between "public interest" and "*the public interest*." Public interest in the technical sense is not to be founded upon a simple production and sale of goods to the general public, however essential those goods may be; rather, the public interest is said to rest upon "the indispensable nature of the service and the exorbitant charges and arbitrary control to which the public might be subjected without regulation." ¹⁷ The Court was relieved of the necessity of determining whether the preparation of food fell within this category, because

¹⁶ *Ibid.*, 535.

¹⁷ *Ibid.*, 538.

it was said that even if the meat-packing industry came within the class of businesses "affected with a public interest," the regulation of wages might not constitutionally be imposed upon the business.¹⁸

THEATER TICKET BROKERS—THE TYSON CASE. In three cases within three years, the Supreme Court attempted to elevate the affected-with-a-public-interest concept into a standard for testing the constitutionality of price-fixing legislation and in so doing imposed new restrictions on the police power of the state legislatures. A New York statute declared that the price of admission to a theater or other place of public amusement or entertainment was a matter of public interest, and sought to limit the advance in price of theater tickets sold through ticket brokers to fifty cents per ticket. The *Tyson* case involved the enforcement of these New York regulations.¹⁹

A strict interpretation of the issue presented to the Court would have confined the decision to the regulation of the maximum price at which a theater ticket could be *resold*, but Mr. Justice Sutherland chose to regard the ticket broker as a mere appendage of the theater. In his reasoning the real inquiry was whether the theater was "clothed with a public interest, so as to authorize a lawmaking body to fix the maximum amount of the charge, which its patrons may be required to pay."²⁰ With the issue thus selected, the decision moved to its goal. The right of an owner to fix the price at which his property shall be sold or used was declared to be "an inherent attribute of the property itself," and within the protection of the due-process clause of the constitution. Building on the dicta of the *Wolff Packing Company* decision, the power of the state to regulate the conduct of a business was distinguished from the power to fix prices, and the latter power was said to exist "only where the business or the property involved had become 'affected with a public interest.'" ²¹

The standard, however, continued to be indefinite; the decision threw no light upon what businesses are "affected with a public interest"—for surely "the existence of conditions, peculiar to the business under consideration, which bore such a substantial and definite relation to the public interest as to justify an indulgence of the legal fiction of a grant by the owner to the public of an interest in the use," is not so easily recognizable that all reasonable men can readily identify those businesses where price regulation may be permitted. Mr. Justice Sutherland not only took Mr. Chief Justice Waite's words and gave them a new and more limited significance, but he also applied the very process of reasoning which the earlier Chief Justice rejected—he compared the characteristics of the theater (not the broker) with those of businesses which had already been admitted to the public-interest category, and concluded that "a theater or other place of entertainment does not meet this conception of Lord Hale's aphorism or fall within the reasons of the decisions of this court based upon it."²²

¹⁸ *Ibid.*, 539, 543.

¹⁹ *Tyson & Brother v. Banton*, 273 U.S. 418-456 (1927). Mr. Justice Sutherland delivered the majority opinion.

²⁰ *Ibid.*, 429. This unnecessary enlargement of the question was challenged by Justices Stone and Sanford. (*Ibid.*, 448-450, 454.)

²¹ *Ibid.*, 431.

²² *Ibid.*, 439.

Mr. Justice Sutherland's manipulation of the affected-with-a-public-interest concept was challenged by the dissenting justices. Since in his opinion "the notion that a business is clothed with a public interest and has been devoted to the public use is little more than a fiction intended to beautify what is disagreeable to the sufferers," Mr. Justice Holmes would put aside "apologetic phrases like the police power" and boldly "recognize that a state legislature can do whatever it sees fit to do unless it is restrained by some express prohibition in the Constitution." In the particular instance, he could find no such constitutional prohibition. Mr. Justice Stone was likewise unable to find any constitutional obstacle to the regulations undertaken by the state of New York, and stated that reliance upon so vague and illusory a phrase as "business affected with a public interest" led to a begging of the fundamental question to be decided. He could find no validity in the distinction between price control and other forms of regulation, and asserted that price control was appropriate whenever there existed "a situation or a combination of circumstances materially restricting the regulative force of competition, so that buyers or sellers are placed at such a disadvantage in the bargaining struggle that serious economic consequences result to a very large number of members of the community."²³

EMPLOYMENT AGENCIES—*RIBNIK V. MCBRIDE*.²⁴ The *Ribnik* decision of the majority continued the trend inaugurated in the *Tyson* case. In an attempt to correct the abuses of private employment agencies, New Jersey established a system of control whereby employment agencies were required to secure a license to operate, and the filing of a schedule of charges was made one of the conditions for obtaining the license. *Ribnik's* application for a license was rejected by the Commissioner of Labor on the sole ground that the proposed schedule of fees was excessive and unreasonable.

As considered by the Supreme Court, the issue in the case became the question whether the due-process-of-law clause of the Fourteenth Amendment was contravened by legislation conferring upon the Commissioner of Labor power to fix the prices which employment agencies might charge for their services. Mr. Justice Sutherland's argument was simple and easy to follow: the business of securing employment for those seeking work was essentially that of a broker; the fixing of prices charged by theater-ticket brokers was declared unconstitutional in the *Tyson* case; the decision in the *Tyson* case was therefore said to be a controlling authority against the fixing of the prices charged for any brokerage service. The opinion was innocent of any analysis of the evils and abuses associated with the operation of private employment exchanges. In the view of the majority, an employment agency was essentially a private business; the fixing of the prices to be charged by a private business constituted a taking of property without due process of law, and was therefore beyond the power of the legislature. The "public interest" which the Court was prepared to recognize was not "that 'public interest' which the law contemplates as the basis for legislative price control."²⁵

Once again the dissenting justices took issue sharply with the legal method and the philosophy of their colleagues. Mr. Justice Stone's opinion presented a

²³ *Ibid.*, 451-452.

²⁴ 277 U.S. 350. Decided May 28, 1928.

²⁵ *Ibid.*, 357.

realistic analysis of the evils associated with the private operation of employment exchanges and the appropriateness of price control to correct those evils. The distinction between price control and other forms of regulation was questioned and rejected as invalid.²⁶

In the cases where he was the spokesman,²⁷ Mr. Justice Sutherland epitomized the attitude of the majority of the Court toward governmental interferences with business. There was, it appeared, a discernible difference between private and public businesses; the precise nature of this distinction remained somewhat vague, though in practical effect it seemed to be that public businesses, that is, those "affected with a public interest," included those already admitted to the category and those whose operations required a franchise or other grant from public authorities. While this distinction preserved the right of regulation over public utilities and closely related categories of business, it left most competitive businesses in the private category. Finally, there was the separation of price controls from other forms of regulation, and the application of a more rigorous test of the constitutionality of price regulation.²⁸

NEW STATE ICE COMPANY v. LIEBMANN.²⁹ Some further light was thrown on the distinction between private and public businesses by the refusal of the Supreme Court to sustain legislation by which Oklahoma sought to require a license as a prerequisite to engaging in the ice business. The purpose of the license requirement was to prevent excessive competition which had had the effect of depriving some communities of all ice service.

A majority of the Court was easily persuaded to the conclusion that "a regulation which has the effect of denying or unreasonably curtailing the

²⁶ "I cannot accept as valid the distinction on which the opinion of the majority seems to me necessarily to depend, that granted constitutional power to regulate there is any controlling difference between reasonable regulation of price, if appropriate to the evil to be remedied, and other forms of appropriate regulation which curtail liberty of contract or the use and enjoyment of property. Obviously, even in the case of businesses affected with a public interest, other control than price regulation may be appropriate and price regulation may be so inappropriate as to be arbitrary or unreasonable, and hence unconstitutional. To me it seems equally obvious that the Constitution does not require us to hold that a business, subject to every other form of reasonable regulation, is immune from the requirement of reasonable prices, where that requirement is the only remedy appropriate to the evils encountered. In this respect I can see no difference between a reasonable regulation of price and a reasonable regulation of the use of property, which affects its price or economic return. The privilege of contract and the free use of property are as seriously cut down in the one case as in the other.

"The price paid for property or services is only one of the terms in a bargain; the effect on the parties is similar whether the restriction on the power to contract affects the price, or the goods or services sold." (*Ibid.*, 373-374.)

Thirteen years later, in sanctioning a state statute fixing the maximum compensation which a private employment agency might collect, the Court held that the "drift away from *Ribnik v. McBride*" had "been so great that it can no longer be deemed a controlling authority." (*Olsen v. Nebraska*, 313 U.S. 236 [1941].)

²⁷ See also *Williams v. Standard Oil Co.*, 278 U.S. 235 (1929), where the "affected-with-a-public-interest" concept was accepted as the established test by which the legislative power to fix prices should be identified.

²⁸ A skillful demonstration of the jurist's art is provided by Mr. Justice Brandeis's opinion in *O'Gorman & Young v. Hartford Fire Insurance Co.*, 282 U.S. 251 (1931), which employed the "affected-with-a-public-interest" concept to uphold state "interference" with the payment of commissions to their agents by insurance companies, and carried the decision against the protests of four dissenting justices.

²⁹ 285 U.S. 262. Decided March 21, 1932. Mr. Justice Sutherland delivered the majority opinion.

common right to engage in a lawful private business" was inconsistent with the Fourteenth Amendment. The opinion stated that the ice business was "as essentially private in its nature as the business of the grocer, the dairyman, the butcher," and that it bore "no such relation to the public as to warrant its inclusion in the category of businesses charged with a public use." Nothing peculiar to the business was found to distinguish it from ordinary manufacture and production. The Court showed an implicit faith in the efficacy of competition, and an incapacity to reconcile the creation of monopoly conditions in the supply of a local service with the protection of the consumer.

In contrast to the majority decision, the dissenting opinion presented a detailed analysis of the operation of the industry and of the relation of regulatory controls to the evils to be corrected. But it did not stop there. Mr. Justice Brandeis went on to present his philosophy as to the respective limits of the police power and the due process of law principle:

"The claim is that manufacturing ice for sale and distribution is a business inherently private, and, in effect, that no state of facts can justify denial of the right to engage in it. . . . But the business of supplying to others, for compensation, any article or service whatsoever may become a matter of public concern. Whether it is, or is not, depends upon the conditions existing in the community affected. . . .

"A regulation valid for one kind of business may, of course, be invalid for another; since the reasonableness of every regulation is dependent upon the relevant facts. But so far as concerns the power to regulate, there is no difference in essence, between a business called private and one called a public utility or said to be 'affected with a public interest.' Whatever the nature of the business, whatever the scope or character of the regulation applied, the source of the power invoked is the same. And likewise the constitutional limitation upon that power. The source is the police power. The limitation is that set by the due-process clause, which, as construed, requires that the regulation shall be not unreasonable, arbitrary or capricious; and that the means of regulation selected shall have a real or substantial relation to the object sought to be obtained. The notion of a distinct category of business 'affected with a public interest,' employing property 'devoted to a public use,' rests upon historical error. The consequences which it is sought to draw from those phrases are belied by the meaning in which they were first used centuries ago, and by the decision of this Court, in *Munn v. Illinois*, 94 U.S. 113, which first introduced them into the law of the Constitution. In my opinion, the true principle is that the State's power extends to every regulation of any business reasonably required and appropriate for the public protection. I find in the due-process clause no other limitation upon the character or the scope of regulation permissible."³⁰

THE PUBLIC-INTEREST CONCEPT IN THE NEBBIA CASE.³¹ The *Nebbia* case

³⁰ *Ibid.*, 301-303.

³¹ *Nebbia v. New York*, 291 U.S. 502. Decided March 5, 1934. Mr. Justice Roberts presented the majority opinion, supported by Mr. Chief Justice Hughes and Justices Brandeis, Stone, and Cardozo. Mr. Justice McReynolds was joined in his dissenting opinion by Justices Van Devanter, Sutherland, and Butler.

arose out of the emergency controls of the depression of the 1930's. Excessive competition, combined with the shrinkage in the consumer markets, demoralized the milk industry, depressing prices to such an extent that the adequacy and purity of the supply of milk was endangered. New York attempted to meet this situation by establishing a Milk Control Board with the function of fixing minimum wholesale and retail prices for fluid milk.³² An appeal from a conviction under the statute presented to the Court the fundamental issue that these price controls violated the due-process clause of the Fourteenth Amendment.

The Court's decision represented a return to the judicial method and philosophy of the *German Alliance Insurance* case. The justices were obviously attentive to the peculiar economic difficulties of the milk industry, the importance of safe milk for the consumer, the economic significance of the industry to the farming population of the state, and the unfair and destructive competitive practices that had arisen under the pressure of depression conditions. In consequence, the opinion of the Court provided a refreshingly realistic discussion of the relation of the controls in question to the problems of the industry, in marked contrast to some of the earlier opinions on regulation. Moreover, the opinion did not shrink from a discussion of general principles, and of the continued acceptance of the decisions of the 1920's as precedents for the restriction of the extension of state controls.

The constitutionality of the New York Milk Control Act was contested on two issues: the statute was said to violate both the equal-protection and the due-process clauses of the Fourteenth Amendment. The Court's opinion was confined largely to the consideration of the claim that the law took the plaintiff's property without due process of law, and reached four consequential conclusions regarding the regulation of business by the states:³³ the rights of property were subordinate to the power of the state to regulate property and personal relations in the interests of the general welfare; the distinctions between price regulation and other forms of control were dismissed as of no significance; the field of competitive business, as well as the fields of monopoly and public utilities, was held to be subject to the visitations of the state's police power; and the affected-with-a-public interest concept was expanded beyond the scope which it had reached in the *German Alliance* case so that it no longer operated as an obstacle to the extension of governmental controls.

The rights of individuals in property and contractual rights are always in collision with the exercise of regulatory controls by the state. Throughout the 1920's the advantage in legal battles seemed to reside with the property rights. But here the Court asserted that "neither property rights nor contract rights are absolute," and that the public right of regulation in the common interest was "equally fundamental with the private right" to use property and exercise freedom of contract.³⁴ The limits on the power to regulate were defined in

³² The power to fix maximum prices was also given, but that power had not been exercised.

³³ It is part of the irony of history that this liberal interpretation of the states' power to deal with problems of economic adjustment came at a time when changing economic conditions made the states incompetent to cope with problems that have become increasingly national in their scope.

³⁴ 291 U.S. 502, 523.

terms of an earlier concept of the essence of "due process." In the language of Mr. Justice Roberts:

"The Fifth Amendment, in the field of Federal activity, and the Fourteenth, as respects state action, do not prohibit governmental regulation for the public welfare. They merely condition the exertion of the admitted power, by securing that the end shall be accomplished by methods consistent with due process. And the guaranty of due process, as has often been held, demands only that the law shall not be unreasonable, arbitrary, or capricious, and that the means selected shall have a real and substantial relation to the object sought to be attained. . . ." ³⁵

The recently erected distinction between price control and other forms of regulation, in accordance with which the Court of the 1920's had denied the asserted right of the states to regulate ticket brokers, employment agencies, and the sale of gasoline, was definitely rejected. Freedom of business to determine prices was deprived of its sacrosanct position, and the validity of price regulation was tested by the same measure that was applied to all control, namely, the appropriateness of the means of regulation to the evils to be corrected. ³⁶

The ultimate consequence of Mr. Justice Sutherland's distinctions between business "affected with a public interest" where price regulation was taboo, had been to permit the extension of price regulation in the utility field where the power was already established, while denying its extension in the field of competitive industry where new economic maladjustments called for a measure of price control. The reversal of this policy by the *Nebbia* decision opened the competitive field to the exercise of the police power, either through price controls or other appropriate measures of regulation. In the words of Mr. Justice Roberts:

"... If the law-making body within its sphere of government concludes that the conditions or practices in an industry make unrestricted competition an inadequate safeguard of the consumer's interests, produce waste harmful to the public, threaten ultimately to cut off the supply of a commodity needed by the public, or portend the destruction of the industry itself, appropriate statutes passed in an honest effort to correct the threatened consequences may not be set aside because the regulation adopted fixes prices reasonably deemed by the legislature to be fair to those engaged in the industry and to the consuming public. And this is especially so where, as here, the economic maladjustment is one of price, which threatens harm to the producer at one end of the series and the consumer at the other. The Constitution does not secure to any one liberty to conduct his business in such fashion as to inflict injury upon the public at large, or upon any substantial group of the people. Price control, like any other form of regulation, is unconstitutional only if arbitrary, discriminatory, or demonstrably irrelevant to the policy the legislature is free to adopt, and hence an unnecessary and unwarranted interference with individual liberty." ³⁷

The final consequence of the *Nebbia* opinion must logically be either the broadening of the affected-with-a-public interest category to include all con-

³⁵ *Ibid.*, 525.

³⁶ *Ibid.*, 531-532.

³⁷ *Ibid.*, 538.

ceivable industries that may require regulation in the interest of the public welfare, or the interpretation of the concept out of existence. The "dedication of property to a public use" becomes meaningless in determining the proper scope of the exercise of the police power. And in place of a "closed class or category of businesses affected with a public interest," it appears that any business or industry may be regulated if the public good is thereby advanced. "Due process of law," instead of marking the bounds of regulatory control, may be satisfied if the legislation has "a reasonable relation to a proper legislative purpose," and is "neither arbitrary nor discriminatory."³⁸ More recent cases have affirmed that the test of price control, whether a business is "affected with a public interest," has been discarded.³⁹

3. THEORIES AS TO THE BASIS OF THE PUBLIC INTEREST

Many theories have been advanced to rationalize the legislative assertion, and the judicial recognition, of the power to regulate particular businesses as to prices charged and services rendered. Some theories have emphasized the legal aspects of the public utility relationship; others have concentrated on the economic characteristics of business.⁴⁰

LEGAL THEORIES. The legal theories may be considered first, since they have received much attention from the courts. It should not be assumed that the legal obligations imposed upon public utilities are the consequence of attaching a particular designation to the business in question. On the contrary, the name follows the legal status; because a business is subjected to certain unusual legal obligations, it comes to be called a "public utility," and is said to be "affected with a public interest." These unusual legal duties and obligations include the rendition of universal, nondiscriminatory service to all who apply and tender the requisite price, the price usually being subject to control by some public authority.

The "holding-out" theory. The beginnings of the "holding-out" theory may be found in the early common law where anyone who held himself out to serve the general public, who engaged in an occupation or trade for business, was designated by the adjective "common," as a "common carrier" "common merchant," "common brewer," or "common cook." Under the prevailing legal doctrines, all who served the public in a regular business way were under an obligation to serve at a reasonable charge.⁴¹

It has been pointed out that the word "common" did not have the historical significance that has sometimes been ascribed to it.⁴² The early distinctions between "common" and "private" were not distinctions between industries or occupations, some subject to regulation and others exempt, but referred to

³⁸ *Ibid.*, 537.

³⁹ *Olsen v. Nebraska*, 313 U.S. 236, 245 (1941). See also *Townsend v. Yoemans*, 301 U.S. 441 (1937), a decision upholding the regulation of the fees charged by tobacco warehousemen.

⁴⁰ Neither class of theory alone gives a completely satisfactory rationalization of the basis for regulation, though the economic are more satisfactory than the legal theories.

⁴¹ With the passage of time, the word "common" fell into disuse, except with reference to a few businesses, of which the "common carrier" is the best-known example.

⁴² Adler, "Business Jurisprudence," 28 *Harv. L. Rev.* 135-162 (1914).

the manner in which the individual carried on his trade or business; it was "common" if his trade was carried on as a business, dealing with all who would give him patronage; it was "private" if public patronage was not sought. In a period when parliament could regulate any business or occupation, there was no recognition of a distinction whereby some businesses were the proper subjects of regulation while others were exempt from controls. And certainly the early distinctions between "common" and "private" businesses lost their significance when all business was carried on to serve the general public.

In more recent times, it has been suggested that the basis for regulation was the "holding out" of the business to serve the general public. But as all business is now conducted with the general public in mind, this criterion provides no mark for the recognition of those businesses which are to be subjected to the public utility controls and similar regulations. Clearly, neither the courts nor the legislatures have acted on the basis of this theory; not every one who "holds himself out" to serve the general public is thereby subject to regulation as to his charges and the character of his service.⁴³

The implied-contract theory. It has been said that the basis for the distinction between those businesses whose prices are subject to governmental control and those that are free from such control is to be found in the implied contract that may be assumed to exist when the business enjoys peculiar rights or privileges from the government. If the business operates under special franchises which give it the right to occupy the public streets with its structures and equipment, the contention may be advanced that it is under an implied contract to accept regulation in the interest of the general public. Or again, if the corporation has been given the right to use the power of eminent domain in the acquisition of property, it is said that it has thereby acquiesced in the supervision of its business by the public.

The implied-contract theory has not been without its supporters on the Supreme Court. Mr. Justice Field, in dissent in *Munn v. Illinois*, argued that "it is only where some right or privilege is conferred by the government or municipality upon the owner, that the compensation to be received by him becomes a legitimate matter of regulation. Submission to the regulation of compensation in such cases is an implied condition of the grant."⁴⁴ And Mr. Chief Justice Taft places in his first category of businesses "clothed with a public interest" those "which are carried on under the authority of a public grant of privileges which either expressly or impliedly imposes the affirmative duty of rendering a public service demanded by any member of the public."⁴⁵ Mr. Justice Sutherland's opinions recur frequently to the thought that regulation of price and service is "confined to conveniences made public because the privilege of maintaining them has been granted by the government."⁴⁶

Though the grant of special privileges is often evidence that a business is

⁴³ *Wolff Packing Co. v. Industrial Court*, 262 U.S. 522, 537-538 (1923).

⁴⁴ 94 U.S. 113, 146-147. Mr. Justice Lamar similarly refers to this theory in his dissent in the *German Alliance Insurance* case, 233 U.S. 389, 426.

⁴⁵ *Wolff Packing Co. v. Industrial Court*, 262 U.S. 522, 535 (1923).

⁴⁶ *Tyson & Brother v. Banton*, 273 U.S. 418, 439 (1927).

recognized as being "affected with a public interest" in such manner as to justify regulation of price and service, it would be a mistake to find in the grant of privileges the source of that public interest. Indeed, it is the previously existing public interest which justifies the grant of special privileges to the business. It is because the operations of the business are essential to the general welfare that permission is granted to occupy the public streets with service structures and to take property through the exercise of the power of eminent domain.

The constructive-grant theory. The constructive-grant theory rests upon the view that those who conduct particular businesses have in some manner granted the public an interest in their business which thereafter justifies the imposition of regulation. While such a theory might have hoped to command a measure of logical support in an earlier age when some activities were carried on as "common" businesses, in contrast to other "private" businesses which did not seek public patronage, the theory loses its capacity for distinguishing those businesses which are subject to regulation from others which are relatively immune when virtually all business exists to serve the public. The only modern counterpart between the old "public" and "private" callings is to be found in the field of transportation, where motor carriers may be either "common carriers" carrying on a transportation business for hire, and "private carriers," operating transportation facilities as an ancillary part of another business.⁴⁷

Mr. Chief Justice Waite is principally responsible for the vogue of the constructive-grant theory. In bringing grain elevators within the scope of the state police power, he stated: "When, therefore, one devotes his property to a use in which the public has an interest, he, in effect, grants to the public an interest in that use, and must submit to be controlled by the public for the common good, to the extent of the interest he has thus created."⁴⁸ In his time, Mr. Chief Justice Taft made the constructive grant the basis for his third category of businesses "affected with a public interest."⁴⁹ However, the only possible logical use of such a category—that is, to uphold regulation for all businesses having regular dealings with the public—was barred when Mr. Taft continued with the observation that "nowadays one does not devote one's property or business to the public use or clothe it with a public interest merely because one makes commodities for, and sells to, the public in the common callings. . . ."⁵⁰

An analysis of the decisions reveals no objective criteria by which the "grant" of an interest to the public can be identified. Certainly, it does not arise from any positive action or intent on the part of the operator of the business. The constructive grant comes about through the operation of external conditions creating a combination of circumstances described by Mr. Chief Justice Taft as including "the indispensable nature of the service," "exorbitant charges and

⁴⁷ An example of this distinction may be found in *Stephenson v. Binford*, 287 U.S. 251 (1932).

⁴⁸ 94 U.S. 113, 126.

⁴⁹ 262 U.S. 522, 535.

⁵⁰ *Ibid.*, 537. Though characterizing the "grant by the owner to the public of an interest in the use" of his business as a legal fiction, Mr. Justice Sutherland found the theory or "fiction" useful in blocking the extension of state controls to theaters and ticket brokers and the price of gasoline. (273 U.S. 418, 438-439; 278 U.S. 235, 240.)

arbitrary control," and the public's becoming "peculiarly dependent upon a particular business." Despite the attempts to give concrete meaning to the concept, the theory remained vague, logically meaningless, and quite useless as a criterion for delimiting the field of regulation. The theory was finally discarded by the majority decision in the *Nebbia* case.⁵¹

The governmental-function theory. The governmental-function theory would rest the power of the state to regulate a business upon the ground that the business, in performing a public or governmental function, is the agent of the state. Thus in *Smyth v. Ames*, Mr. Justice Harlan remarked, "A railroad is a public highway, and none the less so because constructed and maintained through the agency of a corporation deriving its existence and powers from the State. . . . It performs a function of the State."⁵² And in the earlier discussion of railway franchises in *Olcott v. The Supervisors*, this theory found lengthy expression.⁵³ In more recent times, Mr. Justice Brandeis, in his *Southwestern Bell Telephone* opinion, observed that the "company is the substitute for the State in the performance of the public service, thus becoming a public servant."⁵⁴ Commissioner Eastman has also appealed to this theory.⁵⁵

The unsatisfactory character of the governmental-function theory is apparent without the necessity of searching analysis. There is no authoritative list of the economic functions that may appropriately be assumed by the state. In different countries at different times, governments have undertaken virtually all of the economic functions that are now normally performed by business. At the time that the right to regulate many of our public utilities was first asserted, there were no historical precedents to support the conclusion that the company was performing a governmental function. Even the possession of special franchises to occupy the public streets with service structures is insufficient to establish the fact that a particular business is an agent of the state; certainly at the time that manufactured gas or electric supply came under regulation, it would have been difficult to find a governmental function in the illumination of private homes, whatever may have been thought about the lighting of the public ways. Nor is the rendition of transportation service commonly undertaken by the state, even though private companies require the assistance of the power of eminent domain in their performance of that service. The test of a public function does not serve to guide decisions as to what regulatory controls are economically justifiable or constitutionally valid.

The all-inclusive police-power theory. The all-inclusive police-power theory rests upon the rejection of any significant distinction between a category of businesses subject to regulation and another category which may not be regulated without contravening the due process of law clause of the Fourteenth or Fifth Amendments. Implied reliance upon some such theory may be read into Mr. Chief Justice Waite's opinion in the *Munn* case,⁵⁶ and the theory finds support in Mr. Justice McKenna's insistence in the *German Alliance Insurance* case upon divorcing the power to regulate from the employment

⁵¹ 291 U.S. 502, 533-534.

⁵² 83 U.S. 678, 694-695 (1873).

⁵³ *San Pedro, Los Angeles & Salt Lake Railroad Company*, 75 I.C.C. 463, 554 (1923).

⁵⁴ 94 U.S. 113, 125.

⁵⁵ 169 U.S. 466, 544.

⁵⁶ 262 U.S. 276, 291.

of property in a public use.⁵⁷ In the *Tyson* case, Mr. Justice Holmes urged the rejection of the concept of businesses "affected with a public interest" in favor of recognizing "that a state legislature can do whatever it sees fit to do unless restrained by some expressed prohibition in the Constitution."⁵⁸ Nowhere has this theory been more forcefully presented than in the dissenting opinion of Mr. Justice Brandeis in the *New State Ice Company* case.⁵⁹

If the distinctions between price and other forms of regulation be obliterated and if the distinctions between public and private business be recognized as fallacious, then the all-inclusive police-power theory provides the obvious and adequate theoretical basis for regulation. The distinctions between price control and other forms of regulation were introduced by the Court into its decisions in the 1920's. Hinted at in the *Wolff* case,⁶⁰ the interpretation of price regulation as a particularly extreme form of control to be permitted only for those businesses "affected with a public interest" became the basis for denying the right of the states to regulate the operations of theater-ticket brokers,⁶¹ the activities of employment agencies,⁶² and the sale of gasoline.⁶³ Obviously, neither from the point of view of the state which seeks the correction of actual or potential economic maladjustments threatening the welfare of the community, nor from the point of view of the operator of a business or property whose freedom of decision is thereafter curtailed, is there any essential difference between the price regulation which limits the income of the business and other restrictions which curtail its profitableness. This distinction was challenged in Mr. Justice Stone's opinion in the *Ribnik* case,⁶⁴ and finally rejected by the majority of the Court in the *Nebbia* decision.⁶⁵ Further, the fallacious contrast between "private" and "public" business, so effectively criticized in Mr. Justice Brandeis' *New State Ice Company* opinion,⁶⁶ was forsaken by the prevailing opinion in the *Nebbia* case.⁶⁷ At the present time, it may be said that the Supreme Court rests its decisions respecting the extension of state regulation upon the theory of an all-inclusive police power, whereby the "state is free to adopt whatever economic policy may reasonably be deemed to promote public welfare" and that the judicial inquiry will stop with a finding that "the laws passed . . . have a reasonable relation to a proper legislative purpose, and are neither arbitrary nor discriminatory."⁶⁸

ECONOMIC THEORIES. *Monopoly*. Monopoly, or "virtual monopoly," has sometimes been advanced as the test of when regulatory measures by the state become appropriate. This theory is clearly too narrow to fit the decisions which have come from the Supreme Court. Motor carriers, railroads, grain elevators, and insurance companies have been subjected to price regulation even when there was no significant degree of monopolistic control. Even if monopoly conditions are found to exist, the case for price regulation is not conclusive; it may be an occasion for dissolution proceedings under the antitrust laws.

⁵⁷ 233 U.S. 389, 406-411.

⁵⁸ 285 U.S. 262, 301-302. Quoted *supra*.

⁵⁹ 273 U.S. 418, 440.

⁶⁰ 278 U.S. 235, 240.

⁶¹ 291 U.S. 502, 531-532.

⁶² 291 U.S. 502, 536.

⁶³ 273 U.S. 418, 446.

⁶⁴ 262 U.S. 522, 538-539.

⁶⁵ 277 U.S. 350, 358.

⁶⁶ 277 U.S. 350, 373-374. Quoted *supra*.

⁶⁷ 285 U.S. 262, 301-303.

⁶⁸ 291 U.S. 502, 537.

The economic basis of a monopoly may be found in the natural limitations on the supply of essential commodities—natural gas, water supply, or hydroelectric power; in limitations on the number of locations suitable for the business—terminal facilities, grain elevators, and warehouses; in the character of the product which limits the area of distribution—ice, manufactured gas, electricity; or in the immediacy and urgency of the need for the service—the innkeeper, the taxicab, the telegraph; or in the superiority of service by a monopoly which leads to a public policy of restricting entry into a field already occupied by one company—the telephone and usually other local utilities. And although many of the regulated public utilities are monopolies, there are a substantial and increasing number of competitive businesses where government controls are well established. The monopoly theory is of little or no service in explaining either where regulation will be extended or the nature of the controls that are appropriate.

The social-disadvantage theory. The social-disadvantage theory finds the ultimate sanction for regulation in the welfare of society rather than in the protection of individuals. When competitive controls fail to protect any economic group in the community, so that discriminatory practices, exorbitant prices, and restrictions on the availability of essential goods and services result, there exist a *prima facie* case for the extension of regulatory controls; but the case becomes conclusive when as a result of these conditions there exists the actuality or possibility of serious consequences for the community at large. The social stake in control is apparent in every extension of regulation in the past. Where the community at large is not affected, monopolies have been permitted, discriminations have been tolerated and the individual has been left to protect his own interests. But where the welfare of the community is in jeopardy, none of the abuses will be tolerated.

The principle of social disadvantage has received little explicit recognition from the members of the Supreme Court, though it has been implicit in much of the judicial thought in relation to the extension of price control and similar regulations. Mr. Justice Stone formulated the theory with respect to consumers in his dissenting opinion in the *Tyson* case: "Statutory regulation of price is commonly directed toward prevention of exorbitant demands of buyers or sellers. An examination of the decisions of this Court in which price regulation has been upheld will disclose that the element common to all is the existence of a situation or a combination of circumstances materially restricting the regulative force of competition, so that buyers or sellers are placed at such a disadvantage in the bargaining struggle that serious economic consequences result to a very large number of members of the community."⁶⁹ The circumstances illustrative of the consumers' disadvantage may be found in monopoly, the strategic position of a business (grain elevator operators), the predetermination of prices (fire insurance), public emergency (housing and rents), or a threatened shortage of an essential product (milk). The basic essentials of the theory were implicitly recognized in Mr. Justice Roberts's remark that the "phrase 'affected with a public interest' can, in the nature of

⁶⁹ 273 U.S. 418, 451-452. This form of theory may also be found in Tugwell, *The Economic Basis of the Public Interest*.

things, mean no more than that an industry, for adequate reason, is subject to control for the public good."⁷⁰

From the economic viewpoint, the theory of social disadvantage is clearly the most valid rationalization of the occasion for the extension of legislative control over business. And as long as any distinction is attempted between "private business" (which is not ordinarily subject to regulation) and "quasi-public enterprises" (which are subject to control), this economic theory is more useful than any of the legal theories in determining when regulation is appropriate.⁷¹

4. CONCLUSIONS RESPECTING THE CRITERIA FOR GOVERNMENT CONTROL OF BUSINESS

GENERAL OBSERVATIONS. The survey of the leading cases in which the Supreme Court has been asked to pass upon the validity of the extension of state control has amply demonstrated that there is no closed category of businesses which may appropriately be subjected to state control. Changing economic and social conditions may make a business hitherto of little public concern of such importance to the welfare of the community that regulation becomes inevitable. To oppose insurmountable obstacles to the extension of necessary controls must cause economic and social maladjustments with possibilities of harm to the entire community. Where no more serious consequences ensue, the blocking of regulation may force the direct performance of an increasing number of economic functions by the state or its political agencies.

The mere declaration by the legislature that a business is in need of regulation is not conclusive as to the constitutional validity of such control. Despite the increasingly liberal attitude of the Supreme Court toward the assertion of control by the states, it is still possible to challenge each new manifestation of the state's police power.

Finally, the finding that a business is subject to governmental controls does not *per se* determine the type of regulation that will be permitted. It is still requisite that the methods of regulation be reasonably adapted to the accomplishment of the legislative object, and that there be no unreasonable discrimination in the operation of the controls.

In the last analysis, it is the nature of the business, not the character of the property which it employs in its operations, which determines the status of the business with respect to regulation. And the character of the business cannot be considered apart from the relations that have developed or are in prospect between the business and the public.

The list of businesses that have been brought within the public utility category is a lengthy one. Without attempting to be all-inclusive, a classified enumeration of businesses that have been held to come within this category in some part of the United States at some stage in our economic development

⁷⁰ 291 U.S. 502, 536.

⁷¹ It has been noted that the all-inclusive police-power theory involves the rejection of the distinction between "private" and "quasi-public" businesses.

would embrace the following: (1) Transportation—turnpikes and toll roads, canals, railroads, steamship companies, ferries, pipelines, express companies, and motor carriers of passengers and freight; (2) Facilities and services ancillary to transportation—(a) Specialized equipment and facilities—sleeping-car companies, bridges, baggage transfer, and booming companies; (b) Terminal facilities—wharves, docks, and inclined plane; (3) Marketing facilities—commodity exchanges, grain elevators, warehouses, warehousemen, stockyards, and market ticker service; (4) Communications—telegraph, telephone, radio communication and broadcasting; (5) Local utilities—water supply and irrigation, gas (manufactured and natural), electric power, heating, sewerage, and local transit (street railways, taxicabs, et cetera); (6) Survivals from an earlier era of regulation—innkeepers, grist mills, sawmills, hawkers and peddlers, pawnbrokers, and bakers; and (7) Recent additions to the company of regulated enterprises—slaughterhouses, cotton gins, insurance companies, insurance agents, banking, housing, milk, marketing and processing of farm products, butter substitutes, and coal mining.⁷²

⁷² Turnpikes and toll roads—*Carver v. Detroit & Saline Plank-road Co.*, 69 Mich. 616, 25 N.W. 183 (1885); *Winchester Ex. Turnpike Road Co. v. Croxton*, 98 Ky. 739 (1896); Canals—*Wis. T. L. H. & P. Co. v. Green Bay & M. Canal Co.*, 188 Wis. 54 (1925); Railroads—*Raleigh and Gaston R.R. v. Davis*, 19 N.C. 451 (1837); *Chicago, B. & Q. R. Co. v. Iowa*, 94 U.S. 155 (1877); *Peik v. Chicago & N. W. R. Co.*, 94 U.S. 164 (1877); *Dow v. Beidelman*, 125 U.S. 680 (1888); Steamship companies—*Clark v. Burns*, 118 Mass. 275 (1875); *Adams v. New Jersey Steamboat Co.*, 151 N.Y. 163, 45 N.E. 369 (1896); Ferries—*State v. Freeholders of Hudson*, 23 N.J.L. 206 (1851); *Walker v. Armstrong*, 2 Kans. 198 (1863); *Parker v. Metropolitan Railroad Co.*, 109 Mass. 506 (1872); Pipelines—*W. Va. Trans. Co. v. Volcanic Oil & Coal Co.*, 5 W.Va. 382 (1872); *Pierce Oil Corp. v. Phoenix Ref. Co.*, 259 U.S. 125 (1922); Express companies—*Washington ex rel. Stimson Lumber Co. v. Kuykendall*, 275 U.S. 207 (1927); *Re Westcott Express Co.*, P.U.R. 1919A, 733 (N.Y. 1918); Motor carriers of passengers and freight—*Packard v. Banton*, 264 U.S. 140 (1924); *Stephenson v. Binford*, 287 U.S. 251 (1932); Sleeping-car companies—*Pullman Co. v. Green*, 128 Ga. 142, 57 S.E. 231 (1907); Bridges—*Chicago v. McGinn*, 51 Ill. 266 (1869); *International Bridge Co. v. N.Y.*, 254 U.S. 126 (1920); Baggage transfer—*Carlton v. Boudard*, 118 Va. 521, 88 S.E. 174 (1916); *Re New York Transfer Co.*, P.U.R. 1919B, 590 (N.Y., 1918); Booming companies—*Henry v. Roberts*, 50 Fed. 902 (C.C. Md., 1892); *Proprietors of Side Booms v. Haskell*, 7 Me. 474 (1831); *Underwood Lumber Co. v. Pelican Boom Co.*, 76 Wis. 76 (1890); Contra: *Re Klamath River Boom Co.*, 20 Ann. Rep. Oregon P.S. Comm. 34 (1926); Wharves—*Onachita & M. R. P. Co. v. Aiken*, 16 Fed. 890 (1883); Docks—*Barrington v. Commercial Dock Co.*, 15 Wash. 170 (1896); Inclined plane—*Joest v. Clarendon & Rosedale Packet Co.*, 122 Ark. 353 (1916); Commodity exchanges—*House v. Mayes*, 227 Mo. 617, 127 S.W. 305, aff'd 219 U.S. 270 (1911); Grain elevators—*Munn v. Illinois*, 94 U.S. 113 (1877); *Brass v. N. D.*, 153 U.S. 391 (1894); *Budd v. New York*, 143 U.S. 517 (1892); Warehouses—*State Pub. Utilities Commission v. Monarch Refrigerating Co.*, 267 Ill. 528, P.U.R. 1915D, 119 (Ill., 1915); Warehousemen—*Nash v. Page*, 80 Ky. 539 (1882); *Townsend v. Yoemans*, 301 U.S. 441 (1937); Stockyards—*Ratcliff v. Wichita Union Stockyards Co.*, 74 Kan. 1 (1906); *Tagg Bros. & Moorhead v. United States*, 280 U.S. 420 (1930); *Stafford v. Wallace*, 258 U.S. 495 (1922); Market ticker service—*Stock Quotation Teleg. Co. v. Hayes*, 120 Misc. 644, 200 N.Y. Supp. 188 (N.Y., 1923); Telegraph—*Western Union Telegraph Co. v. Foster*, 247 U.S. 105 (1918); Telephone—*State v. Neb. Teleph. Co.*, 17 Neb. 126 (1885); *La. Railroad Comm. v. Cumberland Tel. & Tel. Co.*, 212 U.S. 414 (1909); Radio communication and broadcasting—*Hoover v. Intercity Radio Co.*, 286 F. 1003, 52 App. D.C. 399 (1923), writ of error dismissed, 266 U.S. 636 (1924); *F. R. C. v. Nelson Bros. Bond & Mortg. Co.*, 289 U.S. 266 (1933); Water supply and irrigation—*Spring Valley Water Works v. Schottler*, 110 U.S. 347 (1884); *San Diego Land & Town Co. v. National City*, 174 U.S. 739 (1899); *Stanislaus County v. San Joaquin & King's River Co.*, 192 U.S. 201 (1904); *Slosser v. Salt River Canal Co.*, 7 Ariz. 376 (1901); *White v. Farmers' Highline Canal & Reservoir Co.*, 22 Colo. 191, 43 Pac. 1028 (1896); Gas (manufactured and natural)—*Bath Gaslight Co. v. Claffy*, 26 N.Y. Supp. 287, 74 Hun. 638 (1893); *Opinion of the Justices*, 150 Mass. 592 (1890); *State v. Consumers Gas Trust Co.*, 157 Ind. 345 (1901); *Ohio Oil Co. v. Indiana*, 177

The list of businesses that have been held by the courts not to be affected with a public interest is as diversified as the enumeration of those that have been found within that group: mills, foundries, coal yards, and restaurants are not normally thought to require much public attention; and it is perhaps not surprising that apartment houses, parcel checking, theater-ticket brokers, and the renting of automobiles for hire should be treated as are other businesses; but the exclusion of meat packing, ice manufacture, the sale of gasoline, and employment agencies from the circle of public-interest enterprises seems contrary to the principles underlying the leading judicial pronouncements in this field of law.⁷³

INCONCLUSIVE CRITERIA. It is easier to state what criteria the Supreme Court has found inconclusive than to determine positively what characteristics of a business have supported a particular instance of control. That the business supplies a service or commodity that was formerly supplied by those practicing a "common calling" is a matter of no significance. Nor is the distinction between necessities and luxuries of particular moment. Neither the prevalence of fraud, extortion, or discrimination, nor the fact that the public convenience or welfare is promoted by the operations of the business is conclusive evidence of the propriety of price regulation. The size of the business, either in terms of investment, employment, or output, is of little help in supplying the answer. Not even the possession of monopoly power is certain to bring a business within the public utility fold, though monopoly is a characteristic of many

U.S. 190 (1900), *Dobbins v. Los Angeles*, 195 U.S. 453 (1904); Electric power—*Snell v. Clinton Electric Co.*, 196 Ill. 626 (1902), *Jones v. No. Georgia Elec. Co.*, 125 Ga. 618 (1906); Heating—*Pub. Ser. Comm. v. Valley Mercantile Co.*, P.U.R. 1921D, 803 (Mont., 1921), *Mayer v. Central Heating Co.*, P.U.R. 1923A, 378 (Penna., 1922); Sewerage—*Devon Park Hotel Corp. v. Hunter*, P.U.R. 1928B, 624 (Penna., 1928), *Perkasie v. Perkasie Sewer Co.*, 5 Pa. P.S.C. 243 (1921); Local transit—*W. Phila. Pass. Ry. Co. v. Phila.*, 10 Phila. 70 (1873), *Cleveland Electric Railway Co. v. Cleveland*, 204 U.S. 116 (1907), *Detroit United Ry. v. Detroit*, 229 U.S. 39 (1913), *Terminal Taxicab Co. v. Kutz*, 241 U.S. 252 (1916); Innkeepers—*Ohio v. Norval Hotel Co.*, 103 Ohio 361, 133 N.E. 75 (1921); Grist mills—*Merrill v. Cahill*, 8 Mich. 55 (1860), *State v. Edwards*, 86 Me. 102 (1893); Sawmills—*State v. Edwards*, 86 Me. 102 (1893); Hawkers and peddlers—*Duluth v. Krupp*, 46 Minn. 435, 49 N.W. 235 (1891); Pawnbrokers—*St. Joseph v. Levin*, 128 Mo. 588, 31 S.W. 101 (1895); Bakers—*Mobile v. Yuille*, 3 Ala. (N.S.) 137 (1841); Slaughterhouses—*The Slaughter-House Cases*, 83 U.S. 36 (1873); Cotton gins—*Frost v. Corp. Comm.*, 278 U.S. 515 (1929); Insurance companies—*Fire Dept. of Milwaukee v. Helfenstein*, 16 Wis. 136 (1862), *German Alliance Ins. Co. v. Kansas*, 233 U.S. 389 (1914); Insurance agents—*O'Gorman & Young v. Hartford Fire Ins. Co.*, 282 U.S. 251 (1931); Banking—*Cummings v. Spannhorst*, 5 Mo. App. 21 (1877), *Noble State Bank v. Haskell*, 219 U.S. 104 (1911); Housing—*Block v. Hirsh*, 256 U.S. 135 (1921), *Marcus Brown Holding Co. v. Feldman*, 256 U.S. 170 (1921), *Levy Leasing Co. v. Siegel*, 258 U.S. 242 (1922), *Chastleton Corp. v. Sinclair*, 264 U.S. 543 (1924); Milk—*Nebbia v. New York*, 291 U.S. 502 (1934); Marketing and processing of farm products—*Green v. Frazier*, 253 U.S. 233 (1920); Butter substitutes—*Cook v. State*, 110 Ala. 40, 20 So. 360 (1896); Coal mining—*People v. U.M.W.A., Dist. 15*, 70 Colo. 269, 201 P. 52 (1921).

⁷³ Mills—*Allen v. Jay*, 60 Me. 124 (1872); Foundries—*Loan Ass'n v. Topeka*, 87 U.S. (20 Wall.) 655 (1874); Coal yards—*Opinion of the Justices*, 182 Mass. 605 (1903); Restaurants—*Harvey v. Corporation Commission*, 102 Okla. 266 (1924); Apartment houses—*Davis v. Gay*, 141 Mass. 531 (1886); Parcel checking—*Re Public Service Commission*, 214 N.Y. 46 (N.Y., 1915); Theater ticket brokers—*Tyson & Brother v. Banton*, 273 U.S. 418 (1927); Renting automobiles for hire—*Haddad v. Griffin*, 247 Mass. 369 (1924), *State v. Dabney*, 176 Ark. 1071 (1928); Meat packing—*Wolf Packing Co. v. Industrial Court*, 262 U.S. 522 (1923), 267 U.S. 552 (1925); Ice manufacture—*New State Ice Co. v. Liebmann*, 285 U.S. 262 (1932); Sale of gasoline—*Williams v. Standard Oil Co.*, 278 U.S. 235 (1929); Employment agencies—*Ribnik v. McBride*, 277 U.S. 350 (1928).

of the public utility businesses. Neither the possession of special franchises or grants of privilege, nor the right to take land by eminent domain, points conclusively to regulation of price and service, though these privileges are often an indispensable part of the legal equipment with which the utility carries on its operations.

POSITIVE CRITERIA. In stating the positive criteria, it should first be noticed that the assertion of the power to regulate prices rests, not upon the vague and general dependence of the community upon an industry generally, in the sense in which people are dependent upon landowners for housing and bakeries for bread, but rather upon a direct relationship of dependence of members of the community upon a particular source of supply, as the members of the community are dependent upon a single electric company for electric power and on a single water company for their water. Given this direct dependence upon a particular business for the satisfaction of essential wants, there exists the possibility of abuses in the form of exorbitant charges, discriminatory practices, and poor service. If finally, the failure of a substantial number in the community to satisfy their requirements for the service is accompanied by serious consequences for the community at large, the case for regulation is complete. Or even in the absence of this peculiar dependence of the individual upon the particular business, price regulation may be justified by its appositeness in correcting serious economic maladjustments. In summary, it may be said that regulation is justified when the breakdown in competitive controls leads to serious consequences for the community at large.

THE JUDICIAL PROCEDURE IN PUBLIC-INTEREST CASES. The methods followed by the judiciary in the public-interest cases of the past have left much room for improvement. Conflicting views of the nature of the police power and of the limitations implicit in the due-process requirement have been a fruitful source of confusion within the courts. If the police power be interpreted in terms of the specific regulations which have been permitted in the past, government is placed in a strait-jacket, and necessary institutional adjustments in keeping with a dynamic economy become impossible. In their interpretation of the police power, the courts must recognize the responsibility of the legislature for the preservation of an institutional framework within which a healthy economic life is possible, and must permit the legislature a reasonable freedom in the choice of the means by which it will attempt the correction of economic and social maladjustments. The interpretation of the due-process clause to limit the extension of control over so-called "private businesses" when such controls are required represents a distortion of the constitutional limitations on the power of government, a distortion which is pregnant with danger for the future. The sound interpretation of the due-process clause would require only that regulation be not "unreasonable, arbitrary, or capricious, and that the means selected shall have a real and substantial relation to the object sought to be attained"; in the language of Mr. Justice Roberts, the due-process clauses of the Fifth and Fourteenth Amendments "merely condition the exertion of the admitted power" of the government to regulate in the public welfare.⁷⁴

⁷⁴ 291 U.S. 502, 525.

CHAPTER II

THE HISTORICAL EMERGENCE OF THE UTILITY INDUSTRIES

I. EARLY DEVELOPMENTS

The modern public utility is concerned primarily with supplying local services and commodities such as water, gas, electric energy, transportation, and facilities for communication. Since attention here is centered upon these utility industries, there is no need to go beyond the nineteenth century to get a reasonable perspective.

Many influences and circumstances have contributed to the development and shaping of the modern public utility. Changes in the geographical organization of society, industrial developments, and economic changes have all wrought their effects on utility services.

The growth of population and its concentration in cities has been the most obvious factor enhancing the importance of the public utility. When population was scattered on isolated farms or lived in small villages, each individual provided himself with the primitive counterparts of the modern utility service, or he went without it. The concentration of population not only made possible the specialization and technical developments which the modern utility typifies; it also made possible the development of wholly new products and services which would not have been economically feasible, even if they had been technically available, for populations living in small, scattered communities. Other developments, of which the provision of water supply is most conspicuous, were necessitated by conditions of public health; the individual's well or spring might be protected from contamination in a community where residences were separated and where sewage disposal did not constitute a health menace, but with the development of large cities and crowded conditions of living, the well became not simply a symbol of economic backwardness but also a potential source of infection for the community.

The modern public utility is inconceivable without the technical developments which have made possible the machinery and equipment with which the service is rendered. These developments are in part a function of the demand for the service and in part a function of the industrial maturity of the community. A sufficient demand for utility equipment to enable the economical development of ancillary industries concerned with the manufacture and construction of equipment promoted further development, playing a dominant role in the technical evolution of the industries.

New forms of business organization and the accumulation of capital seeking investment have played an essential part in the evolution of utility enterprises. In contrast to many other business ventures, they require heavy capital investments. The development of the corporate form of business organization greatly facilitated their establishment; the limited liability feature made

investors willing to risk some of their funds in enterprises which at their inception were decidedly speculative; the opportunity to appeal to the general investing public for funds made larger capitalizations possible than would have been available to businesses organized as partnerships or personal ventures. The availability of capital was also a function of the development of the banking, especially the investment banking business. The building of the early railroads represented the chief outlet for investment funds during the latter part of the nineteenth-century, and these funds were available only because banking facilities existed which could tap the capital resources not only of this country but of Europe as well. In their beginnings the small local utilities were often starved for capital funds, but in the twentieth century banking channels directed capital to the utility industries in prodigious sums.

The increasing volume of trade and commerce and the development of industrial production played a very important part in creating the market for utility services. How important these influences were with respect to transportation and communication requires no elaboration. An industrial market for the products and services of local utilities was almost equally important. It was the development of broader markets which enabled utility plants to achieve a fuller utilization of their productive equipment and brought price reductions which opened new areas for utility services.

A final circumstance explaining the development of utility service has been the rising standard of living. The importance of this factor can be appreciated best by comparing the price and quality of utility services in communities having quite different standards of living.

2. WATER SUPPLY

The development of water works has been largely devoid of dramatic incidents. Most of the industry's growth has occurred since the opening of the nineteenth century, although beginnings of public water supply appeared earlier. The first water-supply system was erected in Boston in 1652. It consisted of a simple reservoir which gathered water from nearby springs.¹ The first waterworks to use machinery was that of Bethlehem, Pennsylvania, in 1754, its equipment consisting of a wooden pump, a wooden reservoir, and a log line. Providence, Rhode Island, established its system in 1772. These were the only water-supply systems in the country prior to the Revolution.

The nineteenth century was a century of slow but steady progress for the industry. Table 1 presents the record of the century. In 1800 there were only 16 plants, of which 15 were privately owned. In 1896, there were 3,179 plants of which 53 per cent were publicly owned. Since 1896, the trend toward public ownership has continued and water supply is the one utility that is predominantly publicly owned and managed.

Table 2 presents the data with respect to the ownership and operation of water facilities in cities of over 5,000 according to the Census of 1930. As this table reveals, public ownership is more important than the numerical tab-

¹ M. N. Baker, in Bemis, *Municipal Monopolies*, p. 11.

TABLE 1

NUMBER OF WATERWORKS, PUBLIC AND PRIVATE, IN THE UNITED STATES
1800-1896 *

Date	Public	Private	Total	Per Cent of Total	
				Public	Private
1800	1	15	16	6.3	93.7
1825	5	27	32	15.6	84.4
1850	33	50	83	39.7	60.3
1875	227	195	422	53.8	46.2
1896	1,690	1,489	3,179 ^a	53.2	46.8

* Source: E. W. Bemis, *Municipal Monopolies*, p. 16.^a In 1896 there were 17 additional water systems, of which 12 were of joint ownership and 5 of unknown ownership.

ulation of publicly owned and privately owned plants would seem to indicate. The report covers 1,807 cities, of which 1,313, or 72.7 per cent, were supplied with water from municipally owned enterprises. All 13 of the cities having a population of over a half million reported publicly owned plants, and 25 of the 28 cities in the 200,000-500,000 class had publicly owned waterworks.² As the size of the city declines the proportion supplied from publicly owned systems diminishes, but in every instance over a majority of the cities derive their water from municipal waterworks.

The trend from private to public ownership with respect to the supply of water is less a reflection of the inability of private enterprise to supply the service profitably than it is of public dissatisfaction with the profits which private companies were assumed to be earning and of a realization that the maintenance of sanitary standards of living require that water service be

TABLE 2

OWNERSHIP AND OPERATION OF UTILITIES AS REPORTED BY THE 1,807 CITIES OVER
5,000, AS OF DECEMBER 31, 1939 *

Total Number of Cities over 5,000 Population (1930 Census)	Over 500,000	200,000 to 500,000	100,000 to 200,000	30,000 to 100,000	10,000 to 30,000	5,000 to 10,000
1,807	13	28	52	217	650	847
Waterworks Utilities owned and operated by city						
1,313	13	25	45	172	473	585

* Source: *The Municipal Yearbook*, 1940, pp. 21, 27, 28-30.

rendered at the lowest possible cost. The technical aspects of water supply are sufficiently simple and the market sufficiently stable so that these features have constituted no obstacle to the successful construction or operation of waterworks by governmental units.

² The three cities in this class having privately owned water utilities were Indianapolis, Indiana, Oakland, California, and Jersey City, New Jersey.

The development since 1900 has been characterized by two tendencies. The large metropolitan areas have been forced to go farther and farther afield to find adequate supplies of pure water, and there have been marked improvements in the quality of water furnished.³

3. THE GAS UTILITIES

MANUFACTURED GAS. As a utility undertaking, the manufacture and sale of gas dates from the beginning of the nineteenth century.⁴ The first commercial gas company in the United States was established in 1816 at Baltimore. A plant was established at Boston in 1822 but it failed, and it was not until 1828 that the predecessor to the Boston Consolidated Gas Company erected its plant. Other early plants were those at New York, 1823, Brooklyn, 1835, Bristol, Rhode Island, 1835, and New Orleans, 1835.

In the early period gas was used chiefly for lighting streets and public buildings. It was so expensive that only wealthy individuals could afford it. In 1826 gas was priced as high as ten dollars per thousand cubic feet in New York, and twenty years later the price was still six dollars per thousand cubic feet. Many circumstances explained this high price. The industry was intensely competitive, many communities having more than one company supplying gas service, so that volume of business was small and overhead costs high. The use of gas for illuminating purposes required an expensive process of enriching the gas. The real development of the industry dates from the 1880's, when the newly established electric companies brought competition into the lighting field. The gas companies were forced to develop other markets, although improvements such as the Welsbach mantle enabled them for a time to retain a considerable proportion of the lighting market, and to perfect cheaper methods of production.

The discovery of the water-gas process in 1873 was a significant technological development. This process, which made gas by passing steam through a mass of incandescent coke, resulted in a very considerable reduction in the cost of gas as compared with the cost of the earlier coal-gas method. The first water-gas plant was established in 1873 at Phoenixville, Pennsylvania. Later, by-product gas from the coke ovens of the steel industry provided part of the industry with a cheap source of supply. Recent developments of the market for gas have been concerned with the use of gas in industry, and beginnings have been made in the introduction of gas for residential heating. The future

³ Turneaure and Russell, *Public Water Supplies*, p. 9. U. S. Bureau of Census, *General Statistics of Cities*, 1915, pp. 43-45.

⁴ Gas was known much earlier than this, for Jan Baptista van Helmont, a Belgian, had discovered in 1609 that "gas" (the word comes from *geist*, meaning spirit or ghost) was produced by the combustion of certain fuels. In the third decade of the same century, Dr. Clayton, a Yorkshire rector, had found that the heating of coal in a closed container also produced gas. In 1792, William Murdock, an engineer employed by Watt, used artificial gas conducted through seventy-odd feet of tubing to light his house, and in 1804 he built a gas works to light a cotton mill at Manchester. In the latter year the first English patent for gas making was granted; and eight years later the world's first chartered gas company was created to supply illuminating gas for London.

of the industry depends upon the ability of gas to meet the price of competitive fuels.⁵

Table 3 presents a statistical picture of the development of the industry in terms of the number of plants, the value of the product, the quantities produced and sold, and the number of employees and their wages. The growth

TABLE 3
MANUFACTURED GAS STATISTICS *

<i>Number of Establishments</i>	<i>Number of Employees</i>	<i>Salaries and Wages</i>	<i>Value of Gas Sold</i>	<i>Gas Production (M. cu. ft.)</i>	<i>Average Number of Customers</i>	<i>Annual Sales (M. cu. ft.)</i>
1831						140,000
1841						400,000
1849	30	952	\$391,000			
1851						1,200,000
1859	221	5,730	2,322,000			
1861						4,000,000
1869	390	8,723	6,547,000			
1871						10,700,000
1881						23,500,000
1889	742	12,996	8,500,000	\$46,237,287	36,519,512	
1891						45,000,000
1899	877	22,459	12,436,000	69,432,582	67,093,553	
1901					4,200,000	101,625,366
1909	1,296	37,215	20,931,000	138,615,309	150,835,793	5,425,000
1919	1,022	63,328	77,931,081	282,288,778	344,119,811	8,484,000
1929	754	65,624	100,935,128	438,242,970	450,717,416	12,139,000
1935	520			314,371,303	342,032,403	9,398,600
						328,828,000

* Source: *Moody's Public Utilities*, 1939, pp. a48-a49; *Census Reports*.

of the industry from 30 plants in 1849 to 1,296 in 1909 is a record of sixty years of steady progress. The decline in the number of plants from 1909 to 1929 reflects partly the abandonment of small plants serving small cities where the competition of electric companies for the lighting market left the gas companies without an economic basis for existence, and partly the tendency toward consolidation where more than one plant was operating in the same or adjacent territory. After 1929 the number of manufactured-gas establishments declined as a result of the extension of pipelines which brought natural gas to many communities that had previously used manufactured gas. Table 4 presents a classification of the revenues received by utilities selling manufactured gas from 1929 to 1938. The years from 1933 to 1938 witnessed a marked expansion in the sale of manufactured gas for house heating and for industrial and commercial purposes. However, two-thirds of the industry's revenues are still derived from domestic sales.

⁵ The average retail value of gas per thousand cubic feet since 1889 is shown on the following tabulation (*Moody's Public Utilities*, 1939, p. a51):

1889	\$1.42	1921	\$1.22
1899	1.04	1929	1.10
1914	.86	1938	1.02
1919	.92		

The industry has not been able to reduce the price of its service to a level where gas is truly competitive with cheaper fuels, even when allowance is made for its greater convenience.

TABLE 4
CLASSIFICATION OF MANUFACTURED GAS REVENUES *
(in thousands of dollars)

	<i>Domestic Revenues</i>	<i>House- heating Revenues</i>	<i>Industrial and Commer- cial Revenues</i>	<i>Miscel- laneous Revenues</i>	<i>Total Revenues</i>
1938	\$259,259	\$31,030	\$70,695	\$1,534	\$362,518
1933	277,726	14,089	59,386	1,510	352,711
1929	313,955	11,509	81,414	1,859	408,737

* Source: *Moody's Public Utilities*, 1939, p. a50.

NATURAL GAS. Although the practical use of natural gas is of relatively recent origin, natural gas has been known and observed for many centuries. It is reported that more than a thousand years ago in China gas from salt wells was used in the evaporation of brine. In this country George Washington was connected with one of the early "burning springs" which he dedicated as a national park in 1775 in what is now West Virginia. In the United States the first use of natural gas occurred at Fredonia, New York, where gas coming from a spring was accidentally ignited, and in 1821 a short well was driven near the spring for the purpose of obtaining this gas; in 1825 several stores, shops, and a mill were illuminated by this natural gas.⁶ Commercial exploitation of natural gas did not come until 1870, when the Bloomfield and Rochester Natural Gas Light Company brought gas in wooden pipes from West Bloomfield to Rochester, New York, but the enterprise was a financial failure.

Gas is found in pools or fields located at varying depths in sands similar to those in which petroleum occurs. Indeed, much of the natural gas is produced in conjunction with petroleum. These pools or fields are located under a dome or cap of rock which confines the gas and petroleum. Natural gas occupies the upper part of the dome, petroleum usually lies in the sand below it, and below the petroleum lies salt water. If wells are drilled into the top of the dome only gas is obtained; if the wells are drilled farther from the center of the dome so that they open into the oil sands rather than into the gas, the pressure of the gas will bring petroleum to the surface and the gas may thereafter be used as a by-product. In the extraction of petroleum, competitive drilling and too rapid drawing off results in a waste of natural gas and in a flooding of the field with water, preventing the recovery of much of the petroleum. In most states there are now statutes to enforce conservation, the law stipulating that the natural gas must be used commercially and not allowed to escape into the air or to burn at the field, as so often happened in the early exploitation of oil fields.

Natural gas is known to exist in twenty-seven of the forty-eight states and is produced commercially in twenty-five.⁷ There are three or four principal

⁶ We are dependent for our authentic record of this use of natural gas on the observation of General Lafayette, who visited Fredonia on June 4, 1825.

⁷ Various quantities of natural gas are to be found in Alabama, Arizona, Arkansas, California, Colorado, Idaho, Illinois, Indiana, Kansas, Louisiana, Michigan, Mississippi, Missouri, Montana, New Mexico, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, Utah, Washington, West Virginia, and Wyoming.

producing regions in the United States. The oldest, and for many years the principal, producing area was located in the Appalachian region. At present, most natural gas comes from the mid-continent region, the states of Kansas, Oklahoma, Arkansas, Texas, and Louisiana being the principal producers. Important gas-producing fields are also found in California. The Rocky Mountain region may become more important in the future.

Wherever a market has existed within economical reach of producing areas, natural-gas utilities have experienced a very rapid growth. Table 5 pictures the growth of the industry from 1906 to 1939 in terms of quantity marketed and value of product. In a little more than a quarter of a century the quantity

TABLE 5

GROWTH OF NATURAL-GAS INDUSTRY IN THE UNITED STATES, AS INDICATED BY THE QUANTITY MARKETED, AND ITS VALUE AT THE POINT OF CONSUMPTION, WITH INDEX NUMBERS BASED ON 1906, AND THE VALUE PER THOUSAND FEET FOR 1906 AND 1923 THROUGH 1933 *

Year	Quantity marketed (In millions of cubic feet)	Index no.	Value (In thousands)	Index no.	Average value per 1,000 cubic feet (cents)
1906	388,843	100	\$46,874	100	12.1
1924	1,141,521	294	253,856	542	22.2
1929	1,917,693	493	413,276	882	21.6
1934	1,770,721	455	394,257	841	22.3
1939 ^a	2,437,200	627	539,431	1,151	22.2

* Source: 1906-1929—Federal Trade Commission, *Utility Corporations*, No. 84-A, p. 20; 1934-1939—Department of the Interior, Bureau of Mines, *Minerals Yearbook*, 1938, pp. 907-908, and 1940, p. 1042.

^a 1939 figures are subject to revision.

marketed has increased from 388,843 million cubic feet to 2,437,200 million cubic feet, an increase of 627 per cent. The increase in the value of the product has been even more startling, from approximately \$47,000,000 in 1906 to \$539,000,000 in 1939. The more rapid increase in the value of the product, an increase of 1151 per cent, is a reflection of the success of the industry in reaching new markets. The growth of the market for natural gas is attributable partly to its high heat content, and partly its cheapness. In 1906 the average value per thousand cubic feet was 12 cents, and in 1933 the average value was approximately 22 cents per thousand cubic feet; these figures contrast dramatically with the average retail value per thousand feet of manufactured gas.

Natural gas is predominantly an industrial fuel. In 1934, 78 per cent of the total consumption of natural gas occurred in industry. The remainder of the natural gas was moved to urban centers and distributed by local gas utilities. Table 6 presents an analysis of the industrial consumption of natural gas for the years 1930 and 1934. In 1934, 40 per cent of the natural gas consumed by industry was used in field operations, that is, for drilling operations, for pumping petroleum and natural gas to gathering stations, and for operating plants extracting gasoline from natural gas. The next largest industrial use was in the manufacture of carbon black; these operations absorbed nearly 17

TABLE 6 *

INDUSTRIAL CONSUMPTION OF NATURAL GAS FOR THE YEARS 1930 AND 1934 †

Industries	Quantities of natural gas consumed (millions of cubic feet)			
	1930		1934 ^a	
	Quantity	Per Cent	Quantity	Per Cent
Field use	723,165	46.2	554,542	40.0
Manufacture of carbon black	266,625	17.0	229,933	16.6
Petroleum refineries	98,842	6.3	79,965	5.8
Electric public utility				
power plants	120,290	7.7	127,896	9.2
Other industrial	356,315	22.8	393,155	28.4
Total industrial	1,565,237	100.0	1,385,491	100.0

* Federal Trade Commission, *Utility Corporations*, No. 84-A, p. 46.† Source: *Statistical Appendix to Mineral Year Books*, 1932-1934. Mineral Resources of United States, Part II (Nonmetals) 1928, 1930, U.S. Bureau of Mines Mineral Markets Report, M.M.S., Oct. 29, 1935.^a Preliminary figures.

per cent of the industrial consumption. The development of new industries will undoubtedly lead to more extensive use of natural gas as a raw material. Petroleum refineries accounted for 6 per cent of the industrial consumption and electric public utility companies for 9 per cent. The remainder of the industrial consumption, some 28 per cent, is not shown with respect to specific industries.

The future development of the natural-gas industry will probably bring an increasing proportion of the product to the public utility market. The period since 1925 has witnessed a great extension in the pipelines, some extending more than one thousand miles.⁸ The volume of interstate transmission has kept pace with the growth in interstate pipelines; in the depression years from 1930 to 1934 the interstate movement of natural gas increased more than 55 per cent. The growth of interstate transmission of natural gas has made the problem of the holding company in the gas industry critical. Five holding-company groups—the City Service Company, Standard Oil Company of New Jersey, Electric Power & Light Corporation, Columbia Gas & Electric Corporation, and Standard Gas & Electric Corporation—handled approximately 63 per cent of the total interstate movement of natural gas in 1934.⁹

4. THE ELECTRIC POWER INDUSTRY

Some properties of electricity have been known for centuries. The production of static electricity through rubbing amber with fur, and the attraction and repulsion of light objects, was observed by Thales in 600 B. C., and in 100 A. D. Plutarch reported the magnetic properties of certain stones. Dr.

⁸ Natural gas from the Texas panhandle has been brought to Chicago and Minneapolis. Connected pipelines extend from the Texas panhandle through Oklahoma, Kansas, Missouri, Illinois, Indiana, Ohio, West Virginia, and into Pennsylvania. Gas lines from the Monroe, Louisiana, field cover a territory with a radius of five hundred miles, supplying Atlanta, Memphis, St. Louis, New Orleans, Birmingham, and Pensacola.

⁹ Federal Trade Commission, *Utility Corporations*, No. 84-A, p. 39.

William Gilbert discovered certain aspects of the laws of magnetism while he was physician to Queen Elizabeth. The Leyden jar for storing charges of electricity was discovered by E. G. von Kleist in 1745; and in 1796 Alessandro Volta made the first battery, the so-called "voltaic pile" with a series of discs of silver, zinc, and cloth, wet with sea water. Sir Humphrey Davy in 1809 invented the arc light by attaching two sticks of carbon to the terminals of a voltaic pile. The relation between electricity and magnetism was discovered by Hans Christian Oersted in 1819. And in the same year André-Marie Ampère is credited with discovering the magnetic properties of an electrical charge. In 1827 a German, Dr. G. S. Ohm, formulated in mathematical terms the principle of the electric circuit. Electricity was first generated with a dynamo by Michael Faraday in 1831. For more than a century before the establishment of the first electrical plant, there was widespread interest in the properties of electricity, and much progress had been made in formulating the principles of electric power.

The development of the carbon-filament lamp by Edison in 1879 was the immediate stimulus to the launching of the electric lighting industry. The first central station distributing electric energy, constructed by Edison at Pearl Street in New York City, began operations on September 4, 1882. Within a few days a second Edison station began operations at Appleton, Wisconsin. These first two stations utilized the two methods of production which have subsequently been followed by the industry. The Pearl Street station produced steam-generated power, while the Appleton station generated its power from falling water. From this modest beginning in 1882, the industry has developed to the point where it has a generating capacity of 36,000,000 kilowatts and an annual output of 121,000,000,000 kilowatt hours; the industry serves some 27,000,000 consumers; it has a plant valued at approximately \$13,000,000,000, and produces a gross revenue of nearly \$2,500,000,000.

Table 7 presents the figures with respect to this startling growth. It will be observed that until 1917 there was an increase in the number of operating electric utilities, but from that date the number of establishments has declined, reflecting the trend toward integration and centralization of operations. Perhaps the best index of the industry's growth is the rated generating capacity. From 1902 to 1927, the generating capacity was approximately doubled every five years. This amazing record reflects not simply the extension of electrical service into new territory and the reaching of additional consumers, but also the more intensive development of the market. This intensive development was made possible by progressive reductions in price which made it feasible to apply electric energy to a variety of new purposes.

The technical development of the industry has been as striking as its commercial development. The first generating plants were relatively small, the average capacity being between 200 and 300 kilowatts, with 600 kilowatts as a maximum. The distribution area of any one plant was limited, partly because of imperfections in transmission facilities and partly because the early plants produced only direct current. At first, the largest cities were served by a number of separate power plants. With technical developments that enlarged the area of economical transmission and with the construction of larger gen-

TABLE 7
OPERATING AND FINANCIAL STATISTICS OF ELECTRIC UTILITIES*

Number of Operating Establish- ments	Number of Customers	Kilowatt- hours Generated	Rated Generator Capacity (Kilowatts)	Generated Output per Capita (Kilowatt- hours)	Gross Earnings	Value of Electrical Utility Plant	Em- ployees	Salaries and Wages	Average Revenue per Kwh Sold
1902	3,620	582,689 ¹	2,507,956,115	1,212,235	\$85,700,605.	\$504,740,352.	30,326	\$20,646,692.	
1907	4,714	1,946,979	5,862,276,737	2,709,225	175,642,338.	1,096,913,622.	47,632	35,420,324.	
1912	5,221	3,837,518	11,569,109,885	5,165,439	302,273,398.	2,175,678,266.	79,335	61,161,941.	
1917	6,542	7,178,703	25,438,303,272	8,994,407	526,894,240.	3,060,392,141.	105,541	95,241,858.	
1922	6,355	12,709,868	40,291,536,435	14,313,438	1,072,119,883.	4,465,015,691.	150,762	212,432,655.	2.63¢
1927	4,335	21,790,238	74,686,378,010	25,811,305	1,963,664,324.	9,297,458,356.	251,020	367,631,756.	2.71¢
1932	3,429	23,861,642	79,657,466,651	34,622,554	2,157,295,489.	12,664,376,952.	244,573	323,880,386.	2.85¢
1937	3,501	27,219,362	121,097,430,896	36,481,107	2,484,731,942.	12,940,993,328.	281,335	470,353,487.	2.19¢

* Source: U.S. Bureau of the Census, *Census of Electrical Industries*—1922, 1927, 1932, 1937.

¹ Number of meters on consumption circuits.

erators, mergers were effected, and large central generating stations displaced many small and relatively inefficient units.

The year 1905 saw the first installation of an all-turbine generating plant, with a capacity of 5,000 kilowatts. Today the capacity of the generating unit is commonly 50,000 or 75,000 kilowatts, while New York is served in part from five units each of 160,000 kilowatts capacity, and the State-Line plant in Chicago has a unit with an effective capacity of 200,000 kilowatts. Recent progress in the utilization of fuel has reduced the average fuel consumption per kilowatt-hour of electricity produced from 3 pounds in 1920 to 1.45 pounds in 1934, an increase in overall efficiency of more than 100 per cent in fourteen years. The Diesel oil engine was first used in 1898 and has developed marked advantages for certain installations. Diesel generators have been extensively used by small municipally owned plants and have proved economical.

Developments in transmission have been of primary importance in enabling the industry to concentrate its generation in large, economically operated central stations. With the introduction of alternating current, the economical area of transmission was greatly enlarged. Further expansion in the transmission area was made possible by technical improvement in transformers, in the construction of transmission lines, et cetera. The most modern development in transmission-line construction is the 285,000-volt lines bringing power from Boulder Dam to Los Angeles. A number of transmission lines operate at 220,000 volts. The last two decades have witnessed marked progress in the building of transmission lines connecting many of the larger utility systems. The principal interconnected systems are found in New England, from New York west to Lake Michigan, in the southeastern states, in Texas, and in the Mississippi Valley states. An important transmission system extends from the eastern part of Montana along the line of the Chicago, Milwaukee, St. Paul & Pacific to Seattle and Tacoma. And finally, an important system on the Pacific Coast extends from Portland in the north, to Los Angeles and San Diego in the south. Accompanying the development of long-distance transmission has been the concentration of production and distribution in the hands of a relatively small number of electric systems. For the year 1933, the Federal Power Commission's National Power Survey reported that 215 systems produced and distributed 93 per cent of the total energy reported for the United States. The development of the industry naturally mirrors the distribution of population; a third of the industry is located in the northeast, a third in the Middle West, 13 per cent in the southeast and less than 15 per cent on the Pacific Coast. Table 8 shows the distribution of installed capacity in the power plants of these large systems. The relative importance of steam and hydroelectric plants varies with the region. In the southeast and along the Pacific Coast hydroelectric power is more important than steam power, but for the remainder of the country this is reversed.

The service rendered by the electric power industry has improved, to the accompaniment of rate reductions. From twenty-five cents a kilowatt-hour, the price of electric power has fallen so that at present most utilities sell a substantial proportion of their output to industrial consumers at less than one

TABLE 8

INSTALLED CAPACITY IN MAJOR PRIVATE, MUNICIPAL, AND PUBLIC DISTRICT ELECTRIC UTILITY POWER PLANTS IN THE UNITED STATES, 1934 *
(Data taken from reports of 215 systems)

Zone	Region	Kilowatts	Hydroelectric plants		Fuel electric plants		Total electric plants	
			Per cent of United States Total	Per cent of Zone Total	Per cent of United States Total	Per cent of Zone Total	Kilowatts	Per cent of United States Total
1	Northeast	2,412,000	26.9	23.1	8,036,000	35.5	10,447,000	33.0
2	Middle West	1,037,000	11.5	10.2	9,153,000	40.5	10,190,000	32.2
3	Southcast	2,355,000	26.2	56.2	1,821,000	8.1	4,176,000	13.2
4	Mountain and Plain	345,000	3.8	34.9	644,000	2.9	988,000	3.2
5	Southwest	93,000	1.0	6.1	1,428,000	6.3	1,520,000	4.8
6	Pacific Northwest	1,068,000	11.9	74.4	368,000	1.6	1,437,000	4.6
7	Pacific Southwest	1,675,000	18.7	59.8	1,153,000	5.1	2,829,000	9.0
Total, United States		8,985,000	100.0	28.4	22,603,000	100.0	31,588,000	100.0

* Federal Power Commission, *National Power Survey, Interim Report, Power Series No. 1*, p. 8, Table I.

cent a kilowatt-hour. The early plants operated for only a few hours each day, and then only to supply current for street lighting and the residences of the well-to-do. The development of the industrial market provided utilities with an outlet for their power during the periods of the day when the plant was otherwise idle, and the better utilization of capacity offered the first opportunities for a reduction in rates. The market for electric power is extremely elastic, and every rate reduction has brought new uses for the service. Technical improvements in transmission and distribution paved the way for consolidations and further economies and improvements in service. The importance of the diversified market which the industry developed can be seen from Table 9.

TABLE 9

ANNUAL CONSUMPTION OF ELECTRICITY IN THE UNITED STATES, 1929-33,
BY CLASSES OF CUSTOMERS *
(Data taken from reports of 215 systems. Million kilowatt-hours)

	1929	1931	1933
Farm	1,503	1,787	1,502
Residential and domestic	7,957	9,904	9,971
Small light and power	10,636	10,852	9,727
Large light and power	40,255	34,850	32,153
Municipal street lighting	1,556	1,824	1,592
Municipal light and power	1,443	1,709	1,748
Street railway and interurban railway	4,833	4,386	3,815
Electrified steam railroad	520	572	698
Miscellaneous	2,730	2,550	1,793
Total	71,433	68,434	62,999

* Federal Power Commission, *National Power Survey, Interim Report, Power Series No. 1*, p. 12.

Until the middle 1920's, electric companies seemed to be chiefly interested in expanding the industrial section of their market and with adding to the

number of their residential consumers. Since that time, however, they have sought to develop the market more intensively through the use of promotional rates that have made electricity available for many home operations, incidental appliances, refrigeration, cooking, water-heating, and other uses. Under the stimulus of the federal Rural Electrification program, the industry has undertaken to extend its service more widely into rural areas; in the decade following 1927, the number of rural consumers increased from 168,450 to 1,215,403, but despite this accomplishment a large part of the rural population is still without electric service.

5. THE STREET RAILWAY

The development of the street railway antedates the appearance of electricity as the motive power. The early railways operated with horse-drawn vehicles. In 1836 the first successful street railway was built at Boston, and soon after other cities had their local transportation services. By 1890, when they gave way before the electric railway, these early street railroads were operating more than 5,000 miles of track. The horse-drawn vehicle was never considered to afford a completely satisfactory service: the grades on which such vehicles could operate were definitely limited; service was slow; the work was hard on the horses and the horses were hard on the streets. Various experiments with other forms of tractive power were tried, including an attempt to develop a steam car for city use.

The first satisfactory substitute for the horsecar was the cable car. A continuous cable driven by a stationary engine was located in a slot between the rails. By means of a mechanical grip the operator could attach the car to this cable or release it, thus securing the forward motion of the vehicle or stopping it. A cable-car line was first built experimentally in New York in 1869, and in the early 1870's a cable railway was built in San Francisco. Cable railway operation was costly and the service was not completely dependable. In most cities the cable car was abandoned when the electric car was introduced. In those cities in which cable cars continued to operate, notably Seattle and San Francisco, the retention of this type of service was necessitated by grades too steep to permit successful use of the electric car.

Although motors driven by electric current had been developed for some thirty years, it was not until the 1880's that the first electric streetcar system was placed in operation. The first regular passenger line was opened at Lichterfelde near Berlin, Germany, in 1881. The year 1885 witnessed extensive activity with passenger-carrying electric railways in various American cities. The first commercially operated electric railway in America began running at Baltimore on August 10, 1885. Similar experiments went forward in Cleveland, Kansas City, Denver, Columbus, South Bend, Indiana, Minneapolis, and New York City. These early railways experimented with various devices for conveying power to the car—a third rail, the running rails, a wire in a conduit located between the running rails, and overhead wires. In 1888 there opened at Richmond, Virginia, the first commercially operated trolley line in America using the overhead trolley system which later became the standard.

The perfection of the electric street railway filled a long-felt need, and after its practicability had been demonstrated, its growth was rapid. By 1890, there were 789 street railway companies operating in the United States, many cities having competing companies. The number of companies continued to increase up to 1912, when 1,260 were operating. Thereafter consolidations and abandonment reduced the number to 963 in 1927 and 478 in 1937. Table 10 summarizes the more pertinent statistics.

TABLE 10
ELECTRIC RAILWAYS IN THE UNITED STATES *

	1937 ^c	1932	1927	1922	1912	1902	1890
Number of companies	478	706	963	1,200	1,260	987	789
Miles of line	14,214	20,110	27,948	31,264	30,438	16,645	5,783
Miles of single track		31,548	40,722	43,932	41,065	22,577	8,133
Capitalization (000,000 omitted)	4,900 ^a	5,083 ^a	5,474 ^a	5,447	4,709	2,308	449
Number of employees	152,476	182,165	264,575	300,119	282,461	140,769	70,764
Number of passenger cars	44,864	59,692	70,309	77,301	76,162	60,290	32,505
Number of revenue passengers (000,000 omitted)	7,485	7,926	12,175	12,667	9,546	4,774	2,023
Railway operating revenues (000,000 omitted)	513,129	566,290	918,869	925,477	535,996	400,896 ^b	
Total operating revenues (000 omitted)		566,749	927,774	1,016,719	567,512	247,554	90,617
Operating expenses (000 omitted)	406,119	442,607	694,460	727,795	332,896	142,313	62,001
Net operating revenue (000 omitted)		123,756	233,297	288,924	234,615	105,241	28,606
Total number of bus companies		498	301				
Miles of bus route (one-way)		36,652	14,299	685			
Number of buses		15,064	8,277	370			
Total bus miles (000 omitted)		499,025	272,518	7,116			
Number of bus passengers (000 omitted)		1,302,318	875,402	16,120			
Revenue bus passengers (000 omitted)		1,135,500	771,806	12,406			

* Source: *Moody's Public Utilities*, 1938, p. a42.

^a American Transit Association estimate.

^b For 1907.

^c 1937 excludes trolley-bus operations previously included.

In terms of miles of line and miles of single track, the growth of the industry was even more startling. From 5,783 miles of line in 1890 the industry expanded until it was operating 31,264 miles of line in 1922. Thereafter the miles of line fell with abandonments and receiverships to 14,214 in 1937. A better indication of the intensive development of the industry is supplied by the statistics of miles of single track, which increased from 8,133 in 1890 to 43,932 in 1922. The importance of the industry may also be measured in terms of the number of revenue passengers carried per year. In 1890 over 2 billion revenue passengers were carried by the electric railways; by 1902 the number had reached nearly 5 billion; in 1912 it was almost 10 billion; and in 1922 it reached its peak when

the railways carried 12,666,000,000 passengers; thereafter the number of revenue passengers carried fell to some 7 billion in 1937.

Several circumstances account for the decline of the street railway after 1922. First, the service was obviously overbuilt in relation to the requirements of many communities. Secondly, the appearance of the private automobile cut seriously into the business of the street railways and resulted in abandonments of lines serving outlying communities. The first abandonment occurred in 1915. In every year after 1918 the miles of track abandoned exceeded the new construction. After 1922 abandonments exceeded five hundred miles a year until 1928, when the thousand-mile mark was passed. For the past ten years track-age abandonments have averaged more than one thousand miles a year.

The appearance of the motor bus and the popularity of the private automobile have raised the question as to whether the electric railway has any future. The answer appears to be that the electric railway's field of superiority is to be found in handling large masses of passengers in crowded areas. Where cars must operate with a close headway and where exceptionally heavy volumes of traffic are encountered, the streets of the modern city have not the capacity to handle the traffic in private automobiles or in motor busses. For the future it may be expected that the motor bus will continue to displace the streetcar on those lines where traffic is relatively light.

The present problem of the street railway is largely financial. The prosperity which most of the companies experienced in the period prior to World War I was followed by years of heavy losses and receiverships caused by the rising costs of operation during the war and postwar inflation. Their position was made more precarious by the difficulties experienced in securing rate increases commensurate with rising costs. Table 10 indicates how mounting operating expenses worked havoc with net revenues. Insufficiency of revenue, combined with competition from other forms of transportation, has made the street railway a relatively poor investment, and such companies have been unable to raise the capital necessary to modernize their service. If it is possible to secure a recapitalization of these companies and a modernization of their equipment, the future position of the local transit services seems assured.

In a few larger cities, where the volume of traffic has been beyond the capacity of surface cars to handle, elevated railways and subways have provided mass transportation on a scale greater than the technical and physical facilities of surface lines could provide. The present trend appears to be away from elevated lines, which tend to depress real-estate values, and toward greater dependence on subways to solve the problem of mass transportation. Since subways involve huge investments, it is not unnatural that municipalities have assumed a share of the financial responsibility, and in some instances have taken an active part in the operation and management of the properties.

6. THE TELEPHONE

The telephone industry in this country is essentially the Bell Telephone System. The history of the industry is the history of these companies, and embraces a period of little more than sixty years.

THE BEGINNINGS. The first apparatus for carrying the human voice by wire was developed jointly by Alexander Graham Bell and his assistant, Thomas A. Watson—the first successful experiment taking place in Boston in 1875. Further developments were financed by Thomas Sanders and Gardiner G. Hubbard. Serious financial difficulties were encountered during the developmental years. The Bell Patent Association, organized in 1875 by Bell, Sanders, and Hubbard, was able to provide the funds for the early experimentation. In 1877 the Bell Telephone Company was organized as a Massachusetts voluntary association for the commercial exploitation of the telephone. A year later the Western Union Telegraph Company, which had previously refused to buy the Bell patent, entered the telephone field with an instrument which had been developed by Thomas A. Edison. Patent suits followed, which terminated in a compromise recognizing the priority of Bell's patent and providing that the development of the telephone be left to the Bell interests.

The twenty-five years from 1875 to 1900 were years of experimentation with the technical problems of telephone communication. In 1876 the first complete sentence was transmitted by telephone; in the same year an overhead line was opened between Boston and Cambridge. By 1880 there were over 30,000 Bell telephone stations in the country and the longest telephone line was some 45 miles, from Boston to Providence. In 1884 the first line between Boston and New York, 235 miles, was opened. By 1892 conversations were possible between New York and Chicago. Thereafter the technical progress of the industry was steady and its commercial development spectacular. The early operations of the service were quite imperfect, caused in part by technical difficulties arising from the use of iron wire, imperfect transmitters, easily grounded circuits, and peg switchboards. By 1900, the introduction of copper wire, metallic circuits, the development of multiple switchboards, and the substitution of girl operators for the original boy operators had eliminated many of the difficulties and effected significant improvements in service.

THE ORGANIZATION OF THE INDUSTRY. The Bell Telephone System has rested on the control of the basic Bell patents and other developments by the American Telephone and Telegraph Company. The Bell interests sought to exploit their patent, not through the manufacture and sale of telephone equipment, but through the licensing of companies and individuals to operate and by leasing the telephone instruments to them. This policy allowed the Bell interests to retain control of the new industry and to insure satisfactory standards of service. The rentals for the telephones were fixed by the Bell Company and were collected from subscribers by the licensee and remitted to the Bell Company after the deduction of a stipulated discount, which constituted the compensation of the operator. By November, 1879, the parent organization had entered into 185 contracts for the provision of local telephone service; in fact, all of the more productive territory of the country was covered by these license agreements. At first the licenses were for short periods, commonly five years, and provided that at their expiration the property might be purchased by the licensor at a reasonable price but not in excess of its actual cost. The uncertainties associated with the short-term license soon forced the Bell Company to adopt the policy of granting permanent contracts to its licensees, taking

in return a stock interest in the company. The early license contracts commonly provided that the licensor should receive from 30 to 50 per cent of the capital stock of the licensed company, that the licensee should not borrow money without the consent of the licensor, that the costs of extension and development should be met by the issue of capital stock and not by the use of the profits of the business, and that the licensor should have representation on the operating company's board of directors and executive committee. With the passage of time, the control by the parent organization (shortly thereafter, the American Telephone and Telegraph Company) increased through the purchase of additional stock interests, through consolidations and mergers, and through the acquisition of the holdings of minority stockholders. As early as 1881, a program that envisaged the co-ordination of all phases of the telephone industry was formulated: the supply of local exchange service, the development of long-distance service, and the organization of manufacturing affiliates to supply the necessary equipment were all developed under the control of the parent company. In the beginning, various electrical manufacturers had been licensed under Bell patents to manufacture telephone apparatus, but in 1881 the American Bell Telephone Company acquired a substantial interest in the Western Electric Manufacturing Company, and the reorganized company was granted perpetual manufacturing rights under Bell patents.

From 1875 to 1900 the control of the Bell Telephone System centered in the American Bell Telephone Company, a Massachusetts corporation. Certain restrictive features of the Massachusetts law interfered with the Company's plans for development: the American Bell Telephone Company was prevented by Massachusetts statutes from holding more than 30 per cent of the capital stock of any corporation doing business in the state; it was not permitted to pay dividends in its own stock, or to sell its stock at less than the market price as fixed by the Massachusetts Commissioner of Corporations; and it had difficulty in securing permission to increase its capitalization with the growth of its business. In 1899, therefore, the American Bell Telephone Company transferred its entire holdings of stocks and bonds in subsidiary companies to the American Telephone and Telegraph Company, a New York corporation.¹⁰ The American Bell Telephone Company became the parent of the American Telephone and Telegraph Company, but in the following year the two companies were consolidated. Thereafter, the American Telephone and Telegraph Company was the parent holding company, controlling the associated operating companies, operating the toll lines, directing the manufacturing, and conducting research into the development of telephony. In 1921, the Bell Telephone Securities Company was organized to aid in the financing of the telephone companies. In 1924, Bell Telephone Laboratories, Inc., was established to take over the engineering, and part of the patent, departments of the Western Electric Company; and the parent company's departments of development and research were transferred to it in 1934. At various times in its history, the American Telephone and Telegraph Company has organized, or acquired interests in, other companies active in different fields of communication.

¹⁰ These securities had been carried in the accounts of the American Bell Co. at \$39,000,000, but they were transferred to the American Telephone & Telegraph Co. at \$51,000,000.

THE DEVELOPMENTS OF THE SERVICE. From 1885, when the statistics begin, to 1930, the Bell Telephone System experienced uninterrupted growth. Table 11 pictures the growth of the Bell System in terms of plant and operating statistics. The number of telephone stations increased from 156,000 in 1885 to

TABLE 11 *

GROWTH OF THE BELL TELEPHONE SYSTEM AS REFLECTED BY PLANT AND OPERATING STATISTICS, YEARS 1885 TO 1935, INCLUSIVE, AS OF END OF YEAR

Year	Total Bell-owned stations	Total miles of wire	Total central offices	Total number of employees ¹	Total pay roll ²	Average daily total con- versations
1885	155,751	155,791	1,165	³ 5,766		755,742
1890	227,857	331,642	1,241	8,740		1,444,161
1900	835,911	1,961,801	2,775	37,067		5,817,514
1910	3,933,056	11,642,212	4,933	121,310		22,284,010
1920	8,333,979	25,377,404	5,702	231,316	263,729,030	33,162,600
1930	15,682,059	76,248,265	6,585	324,343	534,468,061	65,298,095
1935	13,923,301	80,458,142	6,787	⁴ 244,599	387,263,755	61,085,000

¹ Does not include the employees of Western Electric Co., Inc.

² Information not reported for years 1884 to 1912, inclusive.

³ Does not include Long Lines employees.

⁴ Does not include occasional employees and employees on leave of absence.

* Federal Communications Commission, *Investigation of the Telephone Industry*, 76 Congress, 1st session, House Document No. 340, p. 41.

over 800,000 in 1900; in 1915, there were nearly 6 million telephone stations in operation, and by 1930 the number had reached 15,682,000. In terms of the total miles of wire the evidence of growth is even more impressive: there were 156,000 miles of wire in 1885; by 1900, there were nearly 2 million miles; by 1915 there were over 18 million miles; and in 1930, over 76 million miles. As of 1935 the system reported over 80 million miles of telephone wire. Increasing intensity in the use of the service is indicated by the growth in the total daily conversations. Since 1930 the Bell Telephone System has handled a daily average of over 60 million telephone conversations.

Back of this growth as reflected in operating and plant statistics lies a record of expansion and achievement that has made the telephone the daily necessity of millions of people. In 1915 occurred the first transcontinental telephone conversation between Boston and San Francisco; in 1921 the first conversation by deep-sea cable took place between Key West, Florida, and Havana, Cuba. In the following year was introduced ship-to-shore conversation by wireless between Bell telephones in homes and offices and a steamship four hundred miles out in the Atlantic. The first radio telephone conversation between New York and London was held in 1926.

The launching of a new industry is favorable to the stimulation of research and experimentation, and the Bell Telephone System throughout its history has made research and experimentation the foundation stone on which it has grown. The parent company, the American Telephone and Telegraph Company, has maintained a staff of experts prepared to aid local operating com-

panies in construction, operation, and commercial phases of the telephone business. Telephone service has shown steady improvement. Some of these improvements have been in the nature of advances in the construction and manufacture of equipment. Others have represented major inventions and important technical advances. Of this character was the development of the mechanical repeater, to be later succeeded by the vacuum-tube repeater, which made practical the development of long-distance telephony. The growth in the number of Bell telephone stations has been accompanied by changes in the organization and equipment of central offices; the dial system has replaced the manual switchboard; and improved operating techniques have brought the service to high efficiency. In recent years the technical developments of the Bell Telephone System have sought not simply to advance and improve the art of wire telephoning, but also to obtain such control of the more recently developed communication fields as to protect the investment in telephone plant and equipment from losses due to the competition of newly emerging forms of communication. The Bell Telephone System has been conspicuous in radio-telephony and wire-telegraphy, television, teletypewriters and sound motion pictures.

THE INDUSTRY TODAY. The American Telephone and Telegraph Company is the holding company for the Bell System, which has consolidated gross assets amounting to more than \$5,000,000,000. The American Telephone and Telegraph Company controls more than 200 subsidiaries, some 140 of which are local operating telephone companies furnishing between 80 and 90 per cent of the local exchange service. The American Company owns more than 98 per cent of the long-distance telephone lines in the United States. With the exception of the telegraph, most of the commercial communication service by wire and radio in this country is controlled by the American Telephone and Telegraph Company, including teletypewriters, radio telephones, telephotographic transmission, and wire transmission for domestic radio broadcasts.

The Western Electric Company, the manufacturing subsidiary of the American Telephone and Telegraph Company, fabricates 90 per cent of the telephone equipment produced in the United States and is also an important manufacturer of sound-recording and sound-reproduction equipment for the motion-picture industry. The dominant position of the American Telephone and Telegraph Company rests on its control of patents, its exclusive licensee agreements, and its control of the manufacture of equipment.

The economic influence and power of the American Telephone and Telegraph Company as the world's largest corporation is difficult to estimate. In 1938 its total operating revenues exceeded \$1,000,000,000. It is the largest private employer of labor, employing some 450,000 persons at its peak of employment in 1929 and numbering some 320,000 on its payrolls in 1932. Millions of telephone users, individuals and business firms, are affected directly by its policies. Three-quarters of a million investors own stock and bonds of the corporations comprising the Bell System. The Bell telephone companies use more than a fourth of the banks of the country. They are important purchasers of materials. The effect of telephonic communication upon the individual and business life of the community is impossible to measure.

THE ECONOMIC CHARACTERISTICS OF PUBLIC UTILITIES

As a prologue to the economic and regulatory problems of public utilities, it is appropriate to consider the economic characteristics of these industries—the conditions of cost under which they operate, the nature of the demand for their services, their capital investments, the sources from which capital funds are derived, and the sources and distribution of utility income. Not all of these matters are the concern of the present chapter, as many of the economic aspects of the utility industries may be more suitably discussed in conjunction with particular phases of regulation. The function of the present chapter is to present only those economic characteristics that should be noticed prior to a more detailed study of the organization, operation, and regulation of public utility enterprises.

1. THE PUBLIC OBLIGATIONS OF UTILITY COMPANIES

Public utilities are distinguished from other businesses by the formal obligations to the public which are imposed upon such companies. Utility enterprises must serve all who apply for the service at reasonable and non-discriminatory prices. They must be prepared at all times to render a service that is adequate both in quality and in quantity, and moreover the services must be immediately available when consumers demand service. In the absence of an alternative, the consumer must take service from the only available utility, and it is, therefore, appropriate that the company should be under a legal obligation to provide the service at a reasonable price.

2. ABSENCE OF COMPETITIVE CONTROLS

Most utility enterprises operate under exclusive franchises which protect them from the competition of a like service. The granting of exclusive franchises was not originally a part of the public policy with respect to utility companies. Experience soon demonstrated that consumers and investors were not protected by such competition as prevailed: rate wars depleted the financial resources of the companies and impoverished investors; the wasteful duplication of capital equipment increased the costs of service; high costs and inadequate income combined to undermine the credit of utility companies and to lower the service standards. And since utility enterprises involve very large fixed investments and normally operate under conditions of decreasing costs, at least when unused capacity is present, there always exists opportunities for savings in costs and enlarged profits from combination and the elimination or avoidance of competition. At last the attempt to protect consumers through maintenance of competitive conditions was abandoned and reliance was placed

in controls embodied in franchise contracts, regulatory statutes, and the orders of administrative commissions.

Unregulated monopoly conditions must always be detrimental to the interests of the consumer. The monopolist, like other businessmen, seeks to maximize his net income. Under monopoly conditions the maximum net income will be obtained by restricting output and charging prices that are substantially in excess of the costs of production. Since utility services are essential to the welfare of the individual and of the community, it is not in the public interest that these services should be restricted to those who can afford to pay a monopoly price, even though that monopoly price represents only a moderate monopoly profit.

The monopolistic character of most utility enterprises is important also from the point of view of the incentives to efficiency. The unregulated monopoly, relieved of the risk that it may be eliminated by the competition of more efficient units, may very probably be less efficient than it would be under competitive conditions. So long as the tastes of consumers remain unchanged and the general level of consumers' income remains undiminished, the unregulated monopoly may be content to accept the profits which accrue, if they are satisfactory, without developing and applying more efficient techniques. To the regulated monopolist, every improvement in efficiency seems only to set the stage for a further reduction in price, which leaves him with no larger income. Under such circumstances, the monopolist may be relatively indifferent to opportunities to effect savings, unless regulation makes some provision whereby the benefits of improvements are shared by the company and the consumer. Also, in examining utility industries, we may expect to find a relatively lower rate of corporate mortality, and a relatively slow introduction of economy-producing technological changes. This situation is in part the result of the protection of utility enterprises from competition and in part a consequence of the regulatory policy which purports to restrict the net income of utility corporations to a fair return on their investment.

3. LARGE-SCALE ENTERPRISE

There are various determinants of the economic scale of business enterprise. First, the size of the market area is the most fundamental factor limiting the size of business enterprise, and is especially important for utility enterprises, since they serve the consumer directly. Secondly, the scale of the business enterprise is limited by the technology of the industry in question. When electric companies were generating and delivering direct current, the economic area of transmission was strictly limited; with the adoption of alternating current and with improvements in transmission, whole states became the market area for a single company. Water companies are characteristically small-scale enterprises in comparison with electric and communication companies because each community can be more economically supplied by utilizing the water resources adjacent thereto. Thirdly, the scale of enterprise is, or may be, limited by the availability of capital. If abundant capital is available, the enterprise may expand to the economic limits set by the technology of the

industry and the size of the market, but if capital is not available, the enterprise may continue at a relatively uneconomic scale.

Though some utilities are relatively large-scale and others relatively small-scale, utility enterprises in comparison with other forms of business are characteristically large-scale enterprises. The railroads, the electric companies, and the telephone companies are typical of those utilities which are ordinarily organized on a large scale both absolutely and relatively. Water supply and local transport are services frequently supplied by corporations of modest size. Table 12 affords a picture of the distribution of utility enterprises among large and small business.

TABLE 12 *
DISTRIBUTION OF ASSETS OF SMALLEST AND LARGEST CORPORATIONS,
BY INDUSTRIAL GROUPS, 1933 ^a

Industrial Groups	Percentage Distribution in Each Group	
	Total Assets under \$50,000	Total Assets \$50,000,000 and Over
Total Manufacturing	20.5	18.5
Transportation and other public utilities	3.0	40.6
Trade	38.4	1.8
Finance	19.5	35.9
Four other branches	18.6	3.2
	<hr/>	<hr/>
All branches	100.0	100.0

* Source: Twentieth Century Fund, *How Profitable Is Big Business?* p. 16.

^a Computed from data in *Statistics of Income for 1933*, pp. 166-167, 173-174, 185-188.

Considering first the group of smallest corporations, it is evident that transportation and public utility services are not normally supplied by businesses having assets under \$50,000. Only 3 per cent of the assets of corporations falling in this group are owned by transportation and public utility companies. In contrast, over 40 per cent of the assets of the largest corporations—that is, those corporations having total assets of \$50,000,000 or more—are owned by utility enterprises. The utility companies are characteristically large-scale enterprises.

The bulk of a utility's funds is invested in fixed plant and equipment. Since utility companies supply a service, there is no occasion for these corporations to have any considerable volume of current assets in the form of inventories or raw materials. The problems of collections and credits are of less significance for utility enterprises than for other undertakings; though its business is not done on a cash basis, the utility normally receives payment for services rendered within a period of a month or a month and a half. The large investment in fixed capital is a reflection of the technology of the particular utility industry. At one extreme are the telephone companies that render an intangible service that calls for no manufacturing process on the part of the utility company. Even where the utility is manufacturing and distributing a commodity, such as electricity, water, or gas, production is largely a matter of

machine technology involving only limited expenditures for labor and raw materials. The large investment of the typical utility also reflects the public obligations that have been imposed upon these enterprises; the necessity of supplying immediately the consumers' demands for service compels an investment adequate to meet the maximum demands which are likely to fall upon the utility enterprise. Even those utilities which are able to store their product, the gas and water utilities, find that the provision of storage capacity necessitates a large investment. Finally, utility investments have grown rapidly and with relative continuity, at least until the depression of 1930. The magnitude and rapidity of this growth may be seen from the statistics presented in Chapter II.

The large capital investment which is characteristic of utility companies and the steady growth which such enterprises have experienced have made the availability of new capital of critical importance. If utility enterprises are to fulfill their public responsibilities, it is essential not only that an adequate supply of new capital be available, but also that the new capital be available on favorable terms. Using the privately owned electric utilities as an example, Table 13 indicates the amount and the sources from which these utilities have

TABLE 13
SECURITY SALES BY CLASSES AND CONSTRUCTION EXPENDITURES FOR
PRIVATE ELECTRIC COMPANIES *
(000,000 omitted)

Year	Bonds, Debentures, etc. ^a	Stocks, Common & Pfd. ^b	Sales to Customers	Total Financing ^b	Allocation of New Capital	Public Sales ^c Refunding	Total Issues	Construction Expenditures Total
1924	\$805	\$176	\$194	\$1,175	\$759	\$223	\$982	\$908
1925	669	314	296	1,278	727	255	982	846
1926	1,013	136	247	1,396	758	393	1,151	773
1927	1,529	360	240	2,129	830	913	1,744	794
1928	922	549	170	1,641	600	637	1,237	754
1929	523	792	145	1,460	624	258	882	853
1930	1,115	338	135	1,588	894	403	1,298	919
1931	1,091	259	159	1,508	424	759	1,183	597
1932	405	47	18	470	166	239	405	285
1933	54	2	..	56	7	47	54	129
1934	131	..	..	131	2	129	131	148
1935	1,068	..	..	1,068	26	1,041	1,068	193
1936	1,280	52	..	1,332	60	1,272	1,332	290
1937	560	86	..	646	82	564	646	455
1938	941	21	..	962	121	841	962	482

* Source: *Moody's Public Utilities*, 1939, pp. a30, a31.

^a To public and institutional investors.

^b Including rights and warrants.

^c Excluding customer sales, stock rights, and warrants.

drawn their capital resources. Under normal circumstances, utility companies have depended upon the sale of new securities to provide them with the required capital, for the regulation of their earnings has not ordinarily made it feasible for these companies to provide for their capital requirements through the reinvestment of earnings. In this respect the public utilities contrast with corporations in industry and trade

4. UTILITY COSTS

COSTS FOR ELECTRIC UTILITIES. *The necessity for considering costs.* An examination of the elements and determinants of costs, both in terms of output and capacity and also with respect to the different functional operations in the production of utility services, is useful alike to management and regulatory authorities. Cost analyses enable management to discover where economies may be realized and provide regulatory authorities with objective criteria for judging the competence of management. Decisions with respect to the amount and direction of new investment must rest on cost studies.

Cost of steam-generated electricity. Electric energy is generated extensively by utilizing high-pressure steam to drive high-speed turbogenerators, the boilers being fired by coal, oil, or natural gas.

Production cost may be analyzed as fixed charges and operating costs. Fixed charges include return on the investment, taxes, and insurance. Depreciation probably belongs among the fixed charges, since it accrues largely whether the plant is operating at capacity or not at all.

The return is related to two factors, the interest rate and the amount of investment. The former is discussed in a later chapter. The latter is composed of the costs of plant, equipment, and overhead items. It has been suggested that, in the typical plant, 45 per cent of the investment is in capital whose magnitude is determined by the size and number of units of the generating equipment, 40 per cent is determined by considerations of thermal efficiency, and the balance by such factors as the type of fuel used, plant location, and characteristics of site selected. These proportions are admittedly not precise; nevertheless they give some conception of the relative importance of various engineering features in determining total investment.¹

The size and number of the generating units are dependent upon characteristics of the system demand and the available reserve capacity of interconnected plants. Up to a point, the cost per kilowatt of rated capacity declines with an increase in the capacity of the generators. But limitations on this saving may result from a decline in load factor and from the necessity of keeping a reserve at least equivalent to the capacity of the largest unit in service. A power pool or super-power system permits a saving in reserve capacity. In large steam plants, such as those of Consolidated Edison of New York or Commonwealth Edison of Chicago, investment per kilowatt of rated capacity seems to reach a minimum of \$100. Under exceptional circumstances the investment might be lower.²

Analysts commonly assume that fixed charges, including depreciation, amount to 13.5 per cent of the investment, assuming an interest return of 7 per cent and depreciation of 4.5 per cent. If any of the assumptions are varied, the amount of fixed charges obviously varies.³ A study of nine large plants appeared to show, on an assumption of a 45 per cent capacity factor, fixed

¹ Justin and Mervine, *Power Supply Economics*, p. 86.

² 7 Ann. Rep. N.Y. Power Authority 89 (1938). See also Justin and Mervine, *op. cit.*, p. 88.

³ The Power Authority assumes a return of 7 per cent, depreciation at 3 per cent compounded annually at 7 per cent, and 2.5 per cent for taxes and insurance. (Power Authority, *op. cit.*, p. 97.)

charges ranging from 3.35 to 4.56 mills per kilowatt-hour.⁴ Increased utilization of capacity brings a decrease in fixed charges per kilowatt-hour.

Operating costs can conveniently be segregated into two classes: one is fixed in nature, the other is directly related to variations in output. Fixed operating costs are related partly to the total capacity of the generating station and partly to the peak prepared for. The number of employees hired, maintenance, and depreciation appear to be partly related to capacity. Other costs are incurred in order to have equipment ready to meet the peak load and hence are related only to the size of the peak itself; for instance, the costs of keeping steam pressures up and generators idling.⁵ In addition, there must be allocated to generation a portion of the administrative overhead of the utility organization. Only a small percentage of operating costs fall in the fixed category, and the percentages becomes smaller as total output increases.⁶

Fuel costs compose the bulk of the variable operating expenses, and are perhaps typically three times as much as all other operating expenses. Saving in operating costs comes mainly through increasing thermal efficiency, that is, through converting more of the energy in the coal into electric energy. Savings of this type can be obtained through burning the fuel more completely and through increasing the temperature range through which the steam falls as it passes through the turbines. Increasing steam pressures, however, necessitates increased investment in equipment and greater wear on the turbine.⁷ In the most efficient steam plants, about 1 pound of coal with a heat content of 14,000 B.T.U. is required to generate 1 kilowatt-hour of electricity. Fuel costs per kilowatt-hour then depend upon the cost of coal; with \$5 per ton coal, it has been estimated that fuel costs should run about 2.5 mills per kilowatt-hour.⁸

Total generating costs per kilowatt-hour sold (some of the current generated has to be used for station service and some is lost in transmission) have been estimated at approximately 7.7 mills per kilowatt-hour under normal conditions; while for nine representative central stations the total cost ranged from 6.89 to 8.83 mills per kilowatt-hour.⁹ The total will vary, of course, not only as a result of physical factors affecting construction or operating costs and of economic factors affecting fuel and labor costs, but also with the demand for current. If the characteristics of the demand are such that approximately full capacity can be utilized, the cost per kilowatt hour will approach a minimum. However, full capacity can seldom be attained, for the load factor is dependent upon the local conditions.¹⁰

⁴ Justin and Mervine, *op. cit.*, p. 88. For other estimates, see Marks, *Mechanical Engineers Handbook*, 1930, p. 1355; Bauer and Gold, *The Electric Power Industry*, p. 68.

⁵ Justin and Mervine, *op. cit.*, pp. 98-101.

⁶ *Ibid.*, p. 103.

⁷ *Ibid.*, p. 68. The mercury vapor-steam cycle is a means of increasing efficiency by securing a greater temperature drop. Mercury vapor has a lower pressure for corresponding heat content than steam, and can, after doing work, be used to heat steam, without necessitating the increased investment usually necessary when high pressures are used. (*Ibid.*, p. 81. See also Bauer and Gold, *op. cit.*, pp. 16 and 25.)

⁸ Bauer and Gold, *op. cit.*, p. 68. See also Justin and Mervine, *op. cit.*, p. 88; Marks, *op. cit.*, p. 1350.

⁹ For estimates of total cost, see Justin and Mervine, *op. cit.*, p. 88; Bauer and Gold, *op. cit.*, p. 68; and 7 Ann. Rep. N.Y. Power Authority 101 (1938).

¹⁰ Units are rated at their capacity in kilowatts when operating most efficiently. Hence, it is

Hydro generation of electricity. Hydroelectric stations generate current by using falling water to turn turbines. These generators revolve at a slower speed than do steam turbines and hence have a longer life.

Costs for hydrogeneration are largely fixed. Hence any change in demand which improves the load factor of a hydro plant will lead to a proportional drop in cost per kilowatt hour. Investments per kilowatt in hydro plants vary widely, depending upon the conditions at the site, the amount of storage capacity, the percentage of the total investment in a multiple-purpose dam allocated to power, et cetera. Private power projects have investments ranging from \$125 to \$350 per kilowatt.¹¹ Fixed charges are a somewhat smaller percentage of investment for hydro than for steam plants, for the former have a lower rate of depreciation and, in the case of public projects, a lower rate of return; these charges vary from 6.5 per cent for public projects to 10.0 per cent for private.¹²

Operating costs have been estimated at approximately \$.80 per kilowatt per year for large hydro stations,¹³ unit costs declining with additional use of capacity. Furthermore, cost per kilowatt of capacity tends to decline as installed capacity increases.

Certain factors limit the usefulness of hydro plants. Their installed capacity does not have the same significance that the installed capacity of a steam plant has, because it is not always available for use. Droughts and floods, seasonal variations in water supply, may render part of the capacity useless for days or weeks. Hence any comparison between steam and hydro plants must specify what portion of the hydro power is "firm"—that is, ready to be used when needed.¹⁴ Hydro developments are limited not only by scarcity of sites, but also by remoteness from markets; the distance may be so great that losses in transmission will more than offset the lower costs of generation at the water-power site. Finally, hydro plants are subject to wastage at certain times of the year, unless proper provision is made to use all the current they are capable of developing, for stream flow may be large when demand is relatively small, and if the water cannot be stored, it must be wasted.

In some circumstances hydro plants used in conjunction with steam are more advantageous than steam plants alone. Their ability to store power may be used profitably; they may carry the base load when the flow is great, and the peak load, operating but a few hours a day, when the stream flow is low. Some hydro plants are built to be used exclusively to carry peaks: they have a very small storage capacity, thus making investment per kilowatt a minimum, and steam energy is used in off-peak hours to pump water back to the

possible to overload them. Dependable capacity is not equivalent to rated capacity because of the necessity for maintaining a reserve. On the general problem of capacity in the industry, see Wilson, "The Electric Power Industry and the Defense Program," 21 *Survey of Current Business* 11-16 (Jan., 1941).

¹¹ Justin and Mervine, *op. cit.*, p. 144.

¹² 7 Ann. Rep. N.Y. Power Authority 85 (1938).

¹³ *Ibid.*, p. 129.

¹⁴ This limitation can be avoided at the expense of additional investment. The reservoir or storage capacity may be increased. Or a run-of-the-river plant may be installed on a stream so large, like the St. Lawrence or Niagara, that there is no danger that variations in stream flow will prevent full utilization of installed capacity.

reservoir for use by the hydro plant when demand is heavy. Another advantage of the hydro unit is that it does not require a long period to warm up; unless steam generators are kept turning over in anticipation of demand, it may take as long as an hour, even with boilers hot, to put them on the line, whereas a hydro turbine can take on the load in three minutes.¹⁵

Transmission costs. Transmission costs cover the expenses from the bus bar of the generating station to the low side of the substations. These costs consist in part of fixed charges and operating costs of the transmission line itself and the substation, and in part of power losses in transmission.¹⁶

Elements bearing on fixed transmission charges are the costs of substations, transformers, circuit breakers, right-of-way, towers, and conductors. Operating costs involve maintenance and repairs, and do not vary appreciably with the amount of current transmitted. Total transmission costs per kilowatt-hour have little meaning, therefore, unless directly related to a specific load factor. For long-distance transmission lines, designed in the most economical manner, the cost per kilowatt-hour seems to approximate 2 mills.¹⁷

Distribution costs. Distribution costs are those incurred to bring current from the low-voltage terminal of the substation to the customers' meters.

Annual fixed charges on distribution investment are typically somewhat larger than total operating costs.¹⁸ Distribution investment includes cost of poles, wires, meters, underground construction, and shows rather wide variation among cities depending upon physical conditions and other factors. A large amount of underground construction, low density of customers per mile of line, and presence of competition tend to increase investment per customer.¹⁹

¹⁵ An exhaustive discussion of the relative merits of steam and hydro power is found in 7 Ann. Rep. N.Y. Power Authority, pp. 47-145 (1938).

In a comparison of power to be generated by a proposed hydro development on the St. Lawrence River and power generated by steam plants located at the market, it was calculated that power could be delivered from the St. Lawrence plant, on a 50 per cent load-factor basis, at a cost of 4.11 mills per kilowatt-hour for 2,267,000,000 kilowatt-hours, while equivalent steam generation, at reasonable coal costs and similar load factor, would be 6.30 mills. Hydro generating cost in this case was 2.55 mills per kilowatt-hour. The most economical steam plant, like a hydro plant, might also have to be constructed at a considerable distance from the load centers in order to get water.

¹⁶ The latter cost is customarily taken into account by increasing generating costs in a proposed project by the amount necessary to provide for the energy losses. The power loss cannot be determined without rather technical investigation. A rule-of-thumb estimate is commonly used; the loss in transmitting St. Lawrence current to New York and intermediate markets was estimated by the Power Authority at 10 per cent. (*Ibid.*, pp. 68 and 117.)

¹⁷ E. F. Scattergood, of the Los Angeles Bureau of Power and Light, estimated that transmission cost on a 300,000-kilowatt line from a St. Lawrence hydro station to New York would be approximately 2.0855 mills per kilowatt-hour, with an 80 per cent load factor, and 2.7806 mills at a 60 per cent load factor; interest on the investment was taken at 4.75 per cent. (3 Ann. Rep. N.Y. Power Authority 37 [1934].) Later Power Authority estimates show a transmission cost of 1.56 mills per kilowatt-hour for energy distributed to the natural market of the proposed St. Lawrence development (within 200 miles). With 50 per cent load factor, total transmission investment was estimated at \$38,625,000 compared with capital cost of the generating plant of \$89,025,500. The cost of transmitting Boulder Dam power 270 miles with the same load factor was estimated at .89 mills per kilowatt-hour. (7 Ann. Rep. N.Y. Power Authority, pp. 117 and 126.)

¹⁸ Federal Power Commission, *Cost of Distribution of Electricity*, pp. 6-7.

¹⁹ In the studies of the Federal Power Commission, there appeared to be no distinct correlation between these factors and the actual investment per residential customer, although there were

Operating costs are usually analyzed into several classes, although there is unfortunately no uniformity in the nature of the expenses allocated to each class. Operating expenses, including repair of lines and maintenance, are affected by weather conditions, presence of trees, wage costs, and traffic conditions. Utilization expense, which includes miscellaneous services rendered to customers such as free lamp renewal, varies widely between systems. Meter reading, billing, and collection, customarily included in the item "commercial expense," are not always segregated from the item "general expense." New business expense depends to a large extent on the competition faced by the utility and the aggressiveness of its management.

Although there is general agreement on the nature and magnitude of the costs for steam generation, it has often been asserted that the circumstances under which distribution takes place vary so widely from community to community that no generalizations regarding these costs are possible.²⁰ Nevertheless, attempts have been made to arrive at standard costs of distribution, the estimates varying with the assumptions as to type of construction and consumption per customer. The New York Power Authority set 2.5 cents as the reasonable cost of distribution to homes having an annual consumption of 600 kilowatt-hours.²¹ An investigation made by the Federal Power Commission showed a variation ranging from 8.5 mills to 3.46 cents as the cost of distribution.²² Further investigations of the Commission have revealed wide variations in distribution and administrative costs, where no comparable variations in operating conditions existed. The Commission's studies also indicated that certain expenses per customer which would normally be expected to decline with an increase in the number of customers, such as accounting and collecting expenses, show no such tendency, and that the companies with the largest number of customers have the highest average expenses per customers for such expenses.²³

wide variations in investment. The Puget Sound Power & Light Co., for instance, operating in competition with a municipal system, had an investment of \$117.99 per customer, while the Department of Water, Light & Power of Springfield, Illinois, in competition with a private company, has an investment of but \$48.27 per customer.

The Power Authority has reached the conclusion that investment per customer tends to vary with average use of current: with an average use of not over 600 kilowatt-hours a year and no rural lines, investment would average \$55; with 3,000 hours' use, \$85 is normal. (8 Ann. Rep. N.Y. Power Authority 217 (1939).)

²⁰ For discussions of distribution costs, see Cooke, *What Electricity Costs*; Sickler, "Cost of Distribution of Electricity," 13 *Journal of Land & Public Utility Economics* 236 (1937); Rau, "Cost of Distributing Power," 19 *Public Utilities Fortnightly* 486 (1937). See also "Report on the Cost of Distribution of Electricity," 4 Ann. Rep. N.Y. Power Authority 1-300 (1935).

²¹ 8 Ann. Rep. N.Y. Power Authority 213 (1939). The Power Authority shows the following costs:

Average kwh. use per month	Cost in cents per kwh.
50	2.5
100	1.415
250	.632
500	.366

For a formula embodying the effects of use and customer density on distribution cost see Ferguson, "Distribution Costs of Domestic Electric Service," The Hartford Electric Light Company, privately printed (1933).

²² Federal Power Commission, *Cost of Distribution of Electricity*, pp. 6-7.

²³ 20 Ann. Rep. F.P.C. 87-91 (1941).

Cost of distribution to commercial and industrial consumers tends to be lower than the cost of distribution to residential consumers. For commercial customers the cost per kilowatt-hour, according to the Federal Power Commission investigation, is about one cent; for industrial customers, the cost is even less. Capital per customer is much higher for these consumers but average consumption is also much higher than for residential customers.

Conclusion. Using the typical costs set forth in the preceding discussion, it appears that a residential consumer using 600 kilowatt-hours a year should pay no more than 3.5 cents per kilowatt-hour: generating costs should be no more than 8 mills per kilowatt-hour; distribution cost should not exceed 2.5 cents; and 2 mills would be available for return on the transmission investment necessary, such as substations and transformers.²⁴ With low-cost hydro power, the rate to the residential consumer should fall below 3.5 cents per kilowatt-hour, the difference depending upon the transmission distance from the power site.

Increment costs, or costs of additional output that does not necessitate the installation of additional capacity, are of much smaller magnitude than the above average-cost figures. They are made up of variable generating, transmission, and distribution costs and approach 7.5 mills for steam plants for residential customers.²⁵

GAS COSTS. Manufactured. The manufactured gas industry faces much the same problems in production that are faced by the electric industry. Most gas sold by public utilities in the United States is "water gas," produced by forcing steam through red-hot coke or anthracite, and enriched by the addition of oil gas. A smaller portion of the market is supplied with coal gas or coke-oven gas. Sometimes gas utilities purchase part of their requirements from coke companies and add water gas to increase the heat content of the mixture. In some cities natural gas is added to water gas to obtain a mixture with a greater heat content than prevails customarily for manufactured gas.

Production costs of manufactured gas may be reduced if marketable by-products are available. By-product gasoline can be obtained from the oil which is used for oil-gas enrichment.²⁶ And, where coke-oven gas is the main source of supply, the gas itself is a by-product or a joint product, and cheaper than water gas, which yields few, if any, marketable by-products.²⁷

Storage of gas is practicable, and hence the manufacturing output need not equal the peak rate of consumption; production during the off-peak hours can fill storage holders, from which the gas moves into distribution when demand is heavy. It has been stated that capacity is often only one-third the maximum

²⁴ The maximum rate suggested is not, of course, invariable, and is suggested only as a standard, deviations from which suggest the need for further explanation.

²⁵ The magnitude of increment costs is suggested by the energy and demand charges in the schedules for large industrial customers, but these rates cannot be relied on for accuracy in determining increment costs. Increment energy cost is assumed to be approximately 2 mills per kilowatt-hour. (Justin and Mervine, *op. cit.*, p. 166.)

²⁶ Willen, "Potentialities of Future Gas Production Costs," 21 *Proceedings of the American Gas Association* 461-474 (1939).

²⁷ Tar and waste steam are the only possible by-products of the water-gas process. See Beebe, "Time Marches On, Where Is Manufactured Gas Marching?," 20 *Proceedings of the American Gas Association* 687, 695 (1938); Marks, *op. cit.*, pp. 824-826.

hour send-out.²⁸ Storage capacity represents a relatively significant part of total investment in plant and equipment.

There is very little interurban transmission of manufactured gas. Transmission costs bulk so large that within the area of most cities large enough to support a gas production plant there can be no competition with a plant located at the market. There are exceptions to this generalization; for example, gas is transmitted by pipeline from New Haven to Hartford, and from Philadelphia to Reading.

Natural gas. Natural gas is produced where geologic conditions have made it available to prospectors. Its cost of production is determined by the return on the investment in drilling the well, and the payments of rentals or royalties.²⁹ Royalties and lease payments are in part determined by the current price of natural gas to the consumer. Although in some gas-producing areas investment in wells is directly allocable to the production of natural gas, in others gas is produced by oil wells, and some gas fields have been discovered in the process of prospecting for oil. Not all production costs are, therefore, attributable to the natural gas. Also, the gas as it comes from the well may contain elements which can profitably be extracted before distributing gas to the consumer: natural gasoline, and several of the liquefied high-heat-content gases, such as propane and butane, can be sold and add to the revenue of the gas producer.

The lack of an industrial market at the gas field forces the transmission of natural gas over long distances, and the greater part of the cost of placing the gas on the market represents fixed charges and operating costs of transmission lines. Fixed charges per unit of gas transmitted can be reduced by increasing the capacity of the pipe and raising the load factor. Fixed charges and operating costs increase with the length of the line, due not only to increased investment in pipe and compressor stations, but also to the necessity of patrolling the lines and operating the compressor stations.

Natural gas, unlike manufactured gas, cannot, for the most part, be stored. Unless there is some provision for marketing, it may be lost forever after it is brought to the surface. In some cases, after the natural gasoline has been extracted from natural gas, it has been blown to the air; or it has been burnt with large losses in fuel efficiency to make carbon black.

Costs of distribution of manufactured and natural gas within urban areas are affected by some of the same factors encountered in the distribution of electricity: density of customers, extent of use, and local conditions affecting the cost of laying pipe.

5. UTILITY REVENUES

A highly significant characteristic of utility incomes is revealed by the relation of the gross revenues of such companies to their total capital. This rela-

²⁸ Beebe, *op. cit.*, p. 694.

²⁹ Detailed surveys of natural gas technology and costs are found in Federal Trade Commission, *Utility Corporations*, No. 84-A, Chaps. IV and LX, and Works Project Administration, National Research Project, *Technology, Employment, and Output Per Man in Petroleum and Natural-Gas Production*. See also National Resources Committee, *Energy Resources and National Policy*, pp. 123-186 (1939).

tion is called technically the "annual turnover." In contrast to other forms of business enterprise, utilities have a low annual turnover, that is, their gross revenue is a relatively smaller percentage of their total invested capital than is true of other business enterprises. It typically requires from five to six years for the utility company to earn gross revenues equal to its total invested capital; while at the other extreme, trading corporations frequently have gross revenues that are four or five times their invested capital. Manufacturing corporations stand intermediate between utility enterprises and trading corporations, having a turnover which is approximately equivalent to their invested capital. Table 14 presents a summary of the turnover of total capitali-

TABLE 14 *

TURNOVER OF TOTAL CAPITALIZATION AND OF NET WORTH, BY INDUSTRIAL GROUPS
AND BY ASSETS CLASSES, 1933: ALL CORPORATIONS ^a

(Total Assets Classes in Thousands of Dollars; Turnover in Percentages)

Total Assets Classes	Total Capitalization or Net Worth	Manufacturing			Transportation and Other		Finance
		Total	Chemicals	Metal	Public Utilities	Trade	
Under 50	T.C.	327.1	238.6	206.2	243.0	460.8	65.2
	N.W.	361.5	261.8	231.6	296.6	494.7	106.4
50-100	T.C.	200.2	169.4	120.9	122.8	295.7	33.5
	N.W.	220.2	182.7	135.1	148.4	320.6	54.7
100-250	T.C.	150.4	141.9	92.1	74.4	242.9	21.3
	N.W.	164.9	151.4	100.9	95.0	266.4	35.9
250-500	T.C.	118.7	113.0	81.1	52.0	217.1	20.1
	N.W.	128.7	119.2	87.7	74.6	236.9	31.9
500-1,000	T.C.	102.3	108.2	70.9	36.9	189.7	22.3
	N.W.	111.3	115.1	76.9	53.1	206.5	32.9
1,000-5,000	T.C.	80.6	88.0	58.7	23.9	185.4	15.5
	N.W.	87.9	93.9	63.7	39.4	203.9	20.8
5,000-10,000	T.C.	67.3	87.5	55.2	18.5	169.8	16.0
	N.W.	76.0	95.8	61.8	31.1	185.5	21.2
10,000-50,000	T.C.	59.5	71.2	43.3	18.6	150.2	17.7
	N.W.	66.6	77.5	48.3	34.5	180.3	22.8
50,000 and over	T.C.	55.6	46.3	43.4	14.9	156.1	24.8
	N.W.	62.7	51.4	48.5	26.8	179.7	25.2
All corporations	T.C.	72.3	56.5	50.4	16.5	214.8	20.0
	N.W.	80.6	62.3	56.0	29.6	239.3	26.1

* Source: Twentieth Century Fund, *How Profitable Is Big Business?* p. 70.

^a Computed from data in *Statistics of Income for 1933*, pp. 173-174, 181-183, 185-188.

zation and of net worth for different industrial groups, classified by size of the corporation. The presentation of these figures, classified according to the size of the corporations, reveals that the turnover is not simply a function of the nature of the business enterprise, but also of the total invested capital; the larger the corporation, the lower the turnover tends to be. Banks and other finance corporations are most similar to public utility corporations in having relatively low turnover of their capital.

The low turnover characteristic of utility corporations makes it essential that a large proportion of each dollar of earnings be available to pay a return on the invested capital. The earnings available for the payment of a return on capital depend on the relative magnitude of the operating expenses. The relationship between operating expenses and gross revenue is expressed in terms of the operating ratio. The *operating ratio* is the ratio of the operating expenses, including taxes and depreciation, to revenues. The lower the operating ratio, the larger is the proportion of income which is available to pay a return on outstanding securities. Whether an operating ratio is favorable or unfavorable depends upon the obligations of the corporation with respect to bond interest and dividends. A formula may be set up to test the reasonableness of the operating ratio in the case of any particular company. In terms of a formula the operating ratio may equal, but it should not exceed the investment ratio, investment ratio being defined as the expression, $100 - X \frac{I}{G}$. $R = 100 - X \frac{I}{G}$. In the equation, R is the operating revenue; G , the gross revenue; I , the investment or total assets; and X , the rate of return that should be earned on the investment.

This equation signifies that the greater the return necessary to take care of bond interest and stock dividends, the lower the operating ratio must be if the company is to have the requisite volume of net earnings. If it be assumed that the ratio of the investment to gross revenue is 5 to 1, then the operating ratio should not exceed 70 if the rate of return is 6 per cent; or 65, if the return is 7 per cent; or 60, if the return is 8 per cent.

The validity of the results obtained by applying this formula depends upon the accuracy of the figures used. In this instance it is assumed that the figures for investment or the total assets represent the actual cost of those assets to the utility company. Error may arise if there is an understatement of operating expenses, such as might follow from a failure to make adequate

³⁰ The derivation of the formula is as follows:

$$\text{If, } R = \text{Operating ratio} = \frac{\text{Operating Expenses (Taxes and Depreciation)}}{\text{Gross Revenue}}$$

And G = Gross revenue

I = Investment (Total assets in the normal case)

X = The percentage return which should be earned on the investment, that is, the sum required for interest, dividends, et cetera

Then, $\frac{R}{100}$ = the operating ratio expressed as a fraction

$$1 - \frac{R}{100} = \text{Net earnings per unit (\$1.00) of gross earnings}$$

$$\frac{G(1 - R)}{100} = \text{Total net earnings}$$

But, Total net earnings should be at least X times I , or $X \frac{I}{100}$ as a fraction.

Therefore,

$$X \frac{I}{100} = G \left(1 - \frac{R}{100} \right) = G \left(\frac{100 - R}{100} \right)$$

$$XI = 100G - GR$$

$$GR = 100G - XI$$

$$R = 100 - X \frac{I}{G}$$

In Nash's *Economics of Public Utilities*, Chapter XII, a similar formula is presented.

provision for depreciation. Where the amount of the depreciation charges is subject to commission control and where the commissions have exercised that power it may be assumed that adequate provision has been made for depreciation; but in cases of uncertainty it may be said that the depreciation charges

TABLE 15 *

EARNINGS OF LARGE CORPORATIONS, 1919-1934 ^a
(Per Cent on Total Capitalization)

Year	Forty Industrials		Nine Public Utilities	
	Arithmetic Average	Median	Arithmetic Average	Median
1919	11.9	9.6	4.8	4.3
1920	10.4	9.0	5.3	5.7
1921	4.3	4.3	4.9	5.2
1922	9.3	9.3	7.7	7.9
1923	9.9	9.0	7.7	7.8
1924	9.2	8.9	8.0	7.7
1925	10.5	11.5	7.9	8.0
1926	12.4	10.7	11.6	8.8
1927	11.4	9.5	9.9	7.8
1928	11.6	11.6	8.2	7.9
1929	11.4	10.3	7.5	7.7
1930	7.8	8.6	7.8	7.9
1931	6.0	5.7	6.4	6.4
1932	1.4	2.6	4.9	6.2
1933	3.3	5.0	5.5	5.9
1934	4.9	6.4	4.6	5.0
1919-1929 ^b	10.2	9.5	7.6	7.8
1919-1934 ^b	8.5	9.0	7.0	7.7

* Source: Twentieth Century Fund, *How Profitable Is Big Business?* p. 117.

^a Computed from data published in various financial manuals.

^b Figures are the averages or medians of the annual figures.

should not be less than 2 per cent of the investment and in normal circumstances it may be expected that depreciation will be somewhat higher.

In contrast to other enterprises, utility corporations are characterized by the stability of their income. While it will be observed from Table 15 that the percentage of earnings to total capitalization was smaller for the utility corporations than for the industrial, the utility companies enjoyed a greater stability of earnings than did the industrial corporations. The median earnings of the utility corporations reported fluctuated between 4.3 per cent and 8.8 per cent, while the median earnings of the forty industrials varied from 2.6 per cent in 1932 to 11.6 per cent in 1938. Table 16 shows the changes in net income and dividends of 677 corporations by industrial groups during the period from 1928 to 1932, a period when all business experienced sharp fluctuations in earnings. In this comparison, despite the fact that transportation companies, which are extremely sensitive to cyclical fluctuations, are grouped with other public utilities, the index numbers show what truly remarkable

TABLE 16 *

CHANGES IN NET INCOME AND DIVIDENDS OF 677 CORPORATIONS,
BY INDUSTRIAL GROUPS, 1928-1932 ^a

	(Index Numbers; 1928 = 100)									
	Net Income					Dividends				
Industrial Groups	1928	1929	1930	1931	1932	1928	1929	1930	1931	1932
Agriculture	100	84	62	29	20	100	104	116	106	63
Mining	100	162	56	4	-17	100	717	427	181	49
Total Manufacturing	100	123	68	15	0	100	121	119	94	58
Construction	100	115	71	30	6	100	123	138	111	55
Transportation and other public utilities	100	115	112	93	71	100	145	165	161	114
Trade	100	105	63	50	16	100	122	122	126	76
Service	100	125	27	-23	-114	100	108	362	132	56
Finance	100	146	73	11	-40	100	150	158	115	59
All Corporations	100	122	72	29	9	100	127	123	96	65

* Source: Twentieth Century Fund, *How Profitable Is Big Business?* p. 135.

^a Minus signs indicate deficits expressed as percentages of the 1928 income.

stability characterizes the net income of utility enterprises in comparison with all other industrial groups.

6. CAPITALIZATION

The capitalization of utility enterprises will be discussed in greater detail when the regulation of security issues is considered. For the present, it is necessary only to observe that utility corporations are characteristically more heavily capitalized than other forms of business enterprise. A large proportion of their capital requirements has been provided by the sale of securities, a relatively smaller proportion through the reinvestment of earnings. Not only is the total of outstanding securities large in relation to the investment in the enterprise, but those outstanding securities may carry fixed charges which are a larger percentage of the utility's earnings than would be considered appropriate for an industrial or commercial corporation. The heavy fixed charges which utilities assume reflect both their need for a large amount of capital, which compels them to resort to all classes of investors, and also the stability of their earnings, which makes it safe for them to assume the obligation to make fixed interest payments.

7. A COMPARISON OF UTILITY AND NON-UTILITY ENTERPRISES

The economic characteristics of utility enterprises may be illustrated by a comparison of the financial statements of representative utility companies with the financial statement of a manufacturing company, the Endicott-Johnson Corporation. Table 17 presents this comparison.

In terms of the composition of the corporate assets, the utility companies characteristically show a concentration of their investments in fixed plant and equipment. The telephone company has a relatively larger investment than other utility corporations, its investment in fixed plant and equipment constituting 95 per cent of its assets. All of the utility companies whose investment figures are shown have an investment in fixed plant of more than 80 per cent. In contrast, the Endicott-Johnson Corporation has only 41 per cent of its investment in plant and equipment.

A notable contrast is also present in a comparison of the importance of current assets to the two classes of business enterprise. The Endicott-Johnson Corporation, a typical manufacturing company, has current assets totaling 54 per cent of its total assets. The utility corporations, on the other hand, have current assets which are less than 10 per cent of the total assets in every instance except that of the Indianapolis Water Company, whose balance sheet shows the unusual sum of 11 per cent for cash and working fund.

An analysis of the liabilities of utility corporations in comparison with the manufacturing companies is equally interesting. The composite figures for electric utilities show outstanding securities representing 79 per cent of the total liabilities; the corresponding figures are 74 per cent for the gas company, 94 per cent for the street railway, 64 per cent for the telephone company, 80 per cent for the water company, and 46 per cent for the manufacturing company. In contrast to the 16 per cent of the liabilities represented by current and accrued liabilities for the manufacturing company, the utility companies report current liabilities of 3 to 9 per cent of the total.

Turning to the income statements, the annual turnover for the utility companies is found to be a mere fraction of the turnover for the manufacturing corporation. In this instance the figures for operating revenues may be taken as substantially equivalent to the gross revenues, and the figures for total assets may be used as representative of the company's capital. The Endicott-Johnson Corporation, with an investment of \$60,257,086, reports gross revenues amounting to \$67,134,962; its annual turnover is 111 per cent, that is, its annual sales are 11 per cent in excess of its investment. For the utility companies, the annual turnover ranges from 10 to 20 per cent. The telephone company has an annual turnover of 20 per cent—that is, 5 years' earnings would be approximately equal to the invested capital. The gas company has a turnover of 19 per cent, the street railway of 18 per cent, the composite electric utilities of 15 per cent, and the water company of only 10 per cent.

The operating ratio has been defined as the ratio of operating expenses, including depreciation and taxes, to operating revenues. Because of the low annual turnover, it is essential that utility corporations have a lower operating ratio than would be necessary for safety with the manufacturing or trading corporations. In the example chosen, the manufacturing corporation has an operating ratio of almost 98 per cent; for a corporation with an annual turnover of 111 per cent, an operating ratio of 98 per cent presumably results in less than normal earnings. In the case of the utility corporations, the operating ratios vary from 86 per cent for the street railway to 54 per cent for the water company.

The operating ratio for the electric companies is 70 per cent—that is, of

TABLE

FINANCIAL STATEMENTS FOR THE

<i>Balance Sheet</i>	<i>Electric Utilities Class A and B Privately owned ¹</i>		<i>Brooklyn Union Gas Company ²</i>	
	Amount in \$ (ooo omitted)	Per Cent	Amount in \$	Per Cent
<i>Assets</i>				
Plant and equipment	13,851,583	82.1	105,299,587	90.25
Investments, etc.	1,462,434	8.7	150,000	.13
Cash and working funds	241,253	1.4	1,208,742	1.04
Other current assets	717,822	4.3	9,082,010	7.87
Deferred debits, etc.	494,243	2.9	425,556	.36
Stock discount—Reacquired securities	106,049	0.6	505,116	.43
	16,873,384	100.0	116,671,011	100.00
<i>Liabilities and other credits</i>				
Common stock, etc.	4,402,953	26.1	37,268,200	31.94
Preferred stock	2,125,432	12.6	—	—
Long-term debt	6,850,194	40.6	49,000,000	42.00
Current and accrued liabilities	692,384	4.1	6,759,067	5.79
Deferred credits	35,113	0.2	1,223,346	10.49
Reserves	1,741,029	10.3	9,212,236	7.90
Surplus	1,026,279	6.1	13,208,162	11.33
	16,873,384	100.0	116,671,011	100.00
<i>Income Statements</i>				
Operating revenues	2,532,444	100.0	22,417,643	100.00
Operating expenses	1,187,485	46.9	13,558,103	60.48
Depreciation, etc.	234,070	9.2	727,983	3.25
Taxes	349,811	13.8	3,605,569	16.08
Total operating revenue deductions	1,771,366	69.9	17,891,656	79.80
Net operating revenue	761,078	30.1	4,525,986	20.19
Other income	78,584	3.1	17,656	0.08
Total income	839,662	33.2	4,543,642	20.27
Income deductions				
Interest on debt	282,905	11.2	2,599,100	11.59
Other income deductions	47,278	1.9	30,938	.14
Total income deductions	330,183	13.1	2,630,038	11.73
Net income	509,479	20.1	1,913,604	8.54
Dividends, preferred stock	126,911	5.0	—	—
Dividends, common stock	305,751	12.1	1,453,460	6.48
Surplus, etc.	76,817	3.0	460,144	2.05

¹ Federal Power Commission, *Statistics of Electric Utilities in the United States for Year Ended December 31, 1937.*

² *Moody's Public Utilities, 1938*, p. 20.

³ *Ibid.*, pp. 35-36.

⁴ *Ibid.*, pp. 235-236.

17

YEAR ENDING DECEMBER 31, 1937

<i>Cincinnati Street Railway Company</i> ⁵		<i>Southern New England Telephone Company</i> ⁴		<i>Indianapolis Water Company</i> ⁵		<i>Endicott Johnson Corporation</i> ⁶	
Amount in \$	Per Cent	Amount in \$	Per Cent	Amount in \$	Per Cent	Amount in \$	Per Cent
29,702,693	81.92	85,040,422	95.48	20,388,109	81.33	24,435,608	40.55
1,278,792	3.53	193,695	.22	21,872	.09	292,059	.48
540,413	1.49	803,441	.90	2,791,869	11.14	3,148,113	5.22
277,913	.77	2,816,592	3.16	431,225	1.72	29,663,829	49.23
2,701,547	7.45	212,232	.24	250,931	1.00	2,718,277	4.51
1,758,084	4.85	—	—	1,183,493	4.72	—	—
36,259,442	100.00	89,066,382	100.00	25,067,499	100.00	60,257,886	100.00
23,761,950	65.53	40,136,539	45.06	5,250,000	20.94	20,268,000	33.64
—	—	—	—	1,054,900	4.21	7,306,000	12.12
10,253,500	28.28	17,000,000	19.09	13,827,000	55.16	—	—
916,080	2.53	8,094,788	9.09	730,555	2.91	9,473,585	15.72
37,523	.10	20,357	.02	38,359	.15	—	—
492,046	1.36	20,265,928	22.75	1,754,086	7.00	17,325,312	28.75
798,343	2.20	3,548,670	3.98	2,412,599	9.62	5,884,989	9.77
36,259,442	100.00	89,066,382	100.00	25,067,499	100.00	60,257,886	100.00
6,353,568	100.00	17,936,338	100.00	2,564,294	100.00	67,134,962	100.00
4,372,129	68.81	9,278,573	51.73	677,915	26.44	65,528,200	97.61
524,989	8.26	3,172,284	17.69	125,668	4.90	—	—
564,161	8.88	1,442,901	8.04	589,669	23.00	—	—
5,461,279	85.96	13,893,758	77.46	1,393,252	54.33	65,528,200	97.61
892,289	14.04	4,042,580	22.54	1,171,042	45.67	1,606,762	2.39
243,232	3.83	60,217	0.34	23,863	.93	215,791	.32
1,135,521	17.87	4,102,797	22.87	1,194,905	46.60	1,822,553	2.72
610,858	9.61	570,000	3.18	483,945	18.87	121,744	.18
4,392	.07	152,228	.85	124,306	4.85	180,093	.27
615,250	9.68	722,228	4.03	608,251	23.72	301,837	.45
520,271	8.19	3,380,569	18.85	586,654	22.88	1,520,716	2.26
—	—	—	—	52,745	2.06	365,300	.54
285,143	4.49	3,100,000	17.28	225,000	8.77	1,216,080	1.81
235,128	3.70	280,569	1.56	308,909	12.04	60,664 ^b	.90

⁵ *Ibid.*, p. 642.⁶ *Moody's Industrials*, 1938, p. 710.^a Depreciation reserve of \$15,724,970.^b Decrease in surplus.

every dollar of operating revenue 70 cents is required to meet operating expenses, taxes, and depreciation, and 30 cents is available for payment of interest on debt, dividends on outstanding securities, and other nonoperating expenses. The operating ratio of the gas company, 80 per cent, shows a smaller proportion of revenue available to pay a return on the investment; and the 86 per cent operating ratio of the street railway indicates an even less favorable situation. The operating ratio of 77 per cent for the telephone company would appear to be more favorable than that of the gas and street railway companies. Water companies typically have a low operating ratio and the company here is no exception; the 54 per cent operating ratio signifies that 46 cents in every dollar of operation revenue are available for the payment of interest, dividends, and other nonoperating expenditures. Whether these operating ratios represent a situation which is satisfactory can be told only by the application of the formula given above. The operating ratio should not exceed $100 - X'_7$.

The discussion of the economic characteristics of public utility enterprises has been intended simply to present a background for the more detailed discussion of the economic and regulatory problems which follows. As different aspects of utility operations come under consideration, the economic problems presented to utility companies and regulatory authorities will be subject to more detailed analysis.

CHAPTER IV

THE CORPORATE STRUCTURE OF THE UTILITY INDUSTRIES: THE HOLDING COMPANY

I. FORMS OF ORGANIZATION

The corporation is the accepted form of organization for the utility industries. Economically, the advantages of the corporate form are especially significant. The relative permanence of organization is highly important for a business that will presumably endure as long as the public demand for the service continues. The large capital requirements of utilities render the limited-liability feature of particular importance in attracting adequate capital. The ability to issue a variety of securities—bonds, preferred stocks and common stocks—permits an appeal to investors of divergent tastes. The provision for delegated managements facilitates the concentration of the technical supervision of operations under the direction of those particularly competent in such matters.

Entry into the public service industries is circumscribed by a variety of legal requirements. In most jurisdictions the right to engage in a utility enterprise is conditional on the possession of a certificate of convenience and necessity,¹ and many states make no provision for the issuance of a certificate of convenience and necessity to any person other than a corporation. The preference for the corporate form of organization is readily understandable. The public is anxious that there shall be a continuity of responsibility which only the corporation can afford. It is imperative that the ability to attract capital be not restricted by the organizational forms which the business adopts, and it is quite apparent that neither the proprietorship nor the partnership could afford such assurance of continuous and responsible management or attract adequate capital to the enterprise. The right to establish a public utility and the right to withdraw from service are both restricted by statute in most states; these limitations can be most effective with respect to a corporation. In the field of the utility operating company the corporation is the almost universal form of organization.²

The utility industries include a number of enterprises other than the operating companies, and these ancillary activities are often organized on a non-corporate basis, although here, too, the corporation is the favorite form of organization.

The voting trust or the voluntary association is based upon the principles of the trusteeship. Securities of utility or other corporations are conveyed to a number of individuals; these individuals as trustees become the legal owners of the securities, exercising the rights of ownership subject to the terms of an agreement embodied in the trust instrument. The voting trust has

¹ Chapter VII.

² Some exceptions are found, however, chiefly among rural telephone companies and local transport companies.

served two common purposes in the utility field. In some instances the voting stocks of certain local operating companies have been deposited with trustees as a means of assuring the continuance of the local management, the voting trust being a defensive measure against the acquisition of a controlling interest in the local company by a holding company or by some outside group. The voting trust has also served as an instrument of combination in states where local statutes have attempted to prevent the acquisition of local operating utilities by foreign holding companies.

The partnership and the proprietorship forms of organization, to the extent that they are found in the utility field, are confined almost exclusively to the professional organizations, engineering and accounting, associated with utility enterprises, and to the financial organizations, such as investment banking houses; but even in these special activities there is a distinct tendency for the corporate form to succeed other types of organization.

Holding companies have dominated the utility industries for the past quarter of a century, and they have invariably made extensive use of the corporate form of organization wherever compelling reasons of a local character have not required the adoption of another form of organization. Not only the holding companies themselves, but the subordinate and affiliated organizations, both utility and non-utility, have usually adopted the corporate form.

2. THE OPERATING COMPANY

The economic characteristics of the operating utility have been pictured in some detail in Chapter III. Economic advantage and legal necessity have both dictated that the operating utility should be organized as a corporation.

The provisions which the state may seek to insert in the corporate charter may include such matters as specifying the minimum capital for different classes of utilities, requiring that a certain proportion of the capital be subscribed or paid in, indicating the classes of securities that may be issued, directing that a certain proportion of the directors be resident in the state, requiring that the principal office and the corporate records be located within the state, et cetera. The state may seek to assure itself of the financial responsibility of those who offer to supply an essential public service. Though such requirements are frequently a source of serious inconvenience and even expense to a corporation engaged in interstate operations, such as a railroad or a pipeline, there can be no persuasive objection to these requirements in the case of a local utility.

3. EARLY COMBINATION MOVEMENTS

Although the service of water supply goes back to the early years of the nineteenth century, the real beginnings of the modern utility industries, especially the gas and electric utilities, date from the last quarter of that century. Service was supplied from local plants operating in relatively small areas, and often several similar utilities would be established in the same city. In the electric field, the generation of direct current limited the econom-

ical area of operations. In the gas field, the service was supplied only where the density of population promised to make the investment remunerative. The era of small plants was not characterized by what would now be considered tolerable service: interruptions were frequent; sometimes the plants operated only during restricted hours; the costs were high.

As the local operating companies developed larger capacities and sought fuller utilization of their existing capacities there arose direct competition between them. Indeed, it was part of the public policy of the times to encourage competition as a means of hastening improvements in service and reducing prices to consumers. Technical improvements accelerated and intensified competition. With the improvement in the construction of gas mains, increased pressures were practical and the single plant could expand its service area. The electric industry at first supplied direct current at low voltages and service was restricted to the environs of the generating plant, but with the introduction of the transformer in 1886 the economical service area was expanded and further competition between local plants became inevitable. Later the adoption of alternating current was to usher in the era of the large central generating plant with a radical reduction in costs.

The first merger movement was characterized by the consolidation of the small local plants. The motives for such combinations were direct and simple: the avoidance of competition which caused many plants to fail and seriously impaired the financial standing of others, the desire to expand the scale of operations to secure the economies of larger-scale production made possible by improvements in the technique of distribution, and an improvement in the financial position of the company in order to attract additional capital.

The methods by which the combinations were effected varied. First, the direct lease of those plants to be operated in conjunction with facilities of the expanding utility offered the simplest means, where leasing was permissible by law and where mutually advantageous terms could be agreed upon. Secondly, the acquisition of the controlling stock in corporations offered an easy method to avoid formal negotiations and the necessity of securing the assent of the security holders or the management of the acquired corporations; but this device was available only where the corporate charter and the applicable state laws permitted one corporation to acquire the stock of another. Thirdly, two corporations may become one through the purchase of all the assets of one by the other. The sale of its property and the discontinuance of its business by a corporation requires not only the vote of the directors but the approval of the stockholders as well, so that the acquisition of a controlling stock interest is often a step in the combination of two enterprises into a single business. Fourthly, the combination may be effected by a consolidation or merger,³ which has the effect of concentrating the ownership of the properties and the managements into a single organization. The consolidation or merger requires the approval of the stockholders of the constituent corporations and of the state. In all of these forms of combination, the acquisition of utility assets

³ Technically, a consolidation involves the combination of two or more corporations into a new corporation, while a merger is the absorption of one or more corporations without the creation of a new corporation.

is of no use to the acquiring corporation unless it is able to obtain the franchise rights which the acquired corporation exercised. Hence the necessity for effecting a transfer of franchise rights always affords the occasion for the assertion of public authority over the terms and conditions of a combination of utility corporations.

The results of the early combination movement were quite generally beneficial to the consumer. The consumer was, of course, deprived of the protection which competition had given him with respect to charges, but the cost of that protection had been excessive measured in terms of poor service and investors' losses. The combination of the small local companies resulted in a reduction in unit costs (which ultimately, if not immediately, brought lower prices for consumers), in a more dependable service with fewer interruptions and breakdowns, and in an extension of the service to new areas and new uses. The investor was given a sounder security, with the prospect of more certain income and greater safety of principal. Some abuses accompanied these early combinations, notably inflation of asset accounts and stock watering, but these abuses, objectionable and regrettable as they were, were only incidental to the larger benefits that were inherent in the combination of small, uneconomical, competing plants into larger and stronger organizations. On balance, the early combination movement was definitely in the public interest.

A second period of integration came when technical improvements made possible a further enlargement in the service area. The gas industry, so long as it was primarily concerned with the supply of manufactured gas, remained a local enterprise. In the 1920's, however, improvements in the construction of pipelines made the long-distance transmission of natural gas possible and speeded the trend toward integration in that industry. The supply of water has remained an essentially local enterprise although many of the larger cities have been forced to go far from their confines to secure adequate supplies of pure water. In the electric industry, the introduction of alternating current stimulated a second wave of integration as the concentration of generation in large central stations brought new efficiencies and lower costs. This second period of integration came after the turn of the century and was accompanied by the growth of large regional operating units. This transformation in the electrical industry was accompanied by a marked growth in the total capital of the industry and the rendition of a greatly improved and more economical service over areas sometimes as extensive as an entire state. Unfortunately, in the electrical utility field, this was the period when the holding-company growth was beginning, and some of the benefits that should have accrued to consumers and investors were absorbed by the holding company.

4. THE HOLDING COMPANY

INTRODUCTORY. The term "holding company" has evolved with the phenomena which it describes. In this discussion, the term "holding company" will follow usage to the extent of making the ability to control the affairs of other companies the essential attribute and distinguishing feature. Thus, a holding company may be defined as any company, whether or not incor-

porated, which is able, presumably though not necessarily through the ownership of voting stock, to control or significantly influence the conduct and affairs of other companies. This definition eliminates the investment company that passively holds the stock of other corporations without attempting to influence their conduct. It concentrates attention on that feature of the holding company which is central to the problems of public control, the ability of the holding company to influence the policies of other businesses.

In the organizations that have grown up in the utility industries, many varieties of holding companies are to be found. The fact that a company is a holding company does not preclude it from having other activities. Thus some holding companies are also operating utilities; others are engaged in the rendition of managerial and technical services to subsidiaries; others are primarily banking and finance companies. Ordinarily, the term holding company is not applied to those investment, and other, banks that find themselves temporarily in possession of a sufficient stock interest in the companies they are financing to permit a control of the management; but where the ownership of a controlling stock interest by a financial house is continued and where there is an exercise of influence over the management, the bank is in effect a holding company.

ORIGINS AND DEVELOPMENT. The holding company would never have become a public problem without certain changes in state policy with respect to the powers of corporations. Under earlier principles of law, a corporation was prohibited from acquiring a stock interest in other corporations. The rationale of this rule was found in the protection of investors against a diversion of their investments from the purposes for which they were made, but it also served a significant public policy in preventing the concentration of control of business capital and the establishment of monopoly. In a few instances where businesses were incorporated by special act of the legislature, charters were sufficiently broad to permit the corporation to acquire the stock of other businesses and to exercise all the rights of control which would accrue to natural persons in the same position.

The grant of more liberal corporate charters was the beginning of that "race for laxity" which has characterized the competition of the states for incorporation fees. New Jersey led the way in 1889 with an amendment to its incorporation laws which permitted companies organized under the law of 1875 to purchase the stock of any company producing materials necessary for their own business, and in 1896 a further amendment permitted any corporation to buy and hold the stock of any other corporation, exercising all the rights of ownership. The bid of New Jersey for the business of incorporating American business was answered and bettered by other states until today nearly all states grant the power to hold stock in other corporations in the broadest terms. Other relaxations in the restrictive features of incorporation laws that worsened the position of the investor and gave rise to increasingly serious problems of public control were: allowing excessive discretion to officers and directors in the acquisition and disposal of property, permitting officers and directors to have an interest adverse to the corporation in the acquisition of property or in the negotiation of contracts, permitting the issuance

of no-par stock, allowing the payment of dividends out of capital surplus without full disclosure to investors, et cetera.

The first utility holding companies were in the gas industry. The United Gas Improvement Company of Philadelphia was one of these early holding and financing companies. It was incorporated in 1882 and subsequently reorganized under a special charter granted to the Union Contract Company, a charter which gave unusually broad powers "to construct, maintain, and manage any work and furnish all necessary material and labor and implements of any kind, to hold and own securities in any form, either as collateral or otherwise, and dispose of the same." By 1902, the United Gas Improvement Company controlled thirty-four companies operating in sixteen states. From the beginning the holding companies in the electric and gas industries were interrelated. This was not unnatural, since electricity immediately invaded the lighting field which the gas companies had supplied.

The holding companies that were later to dominate the utility fields had quite diverse origins. In the telephone field, the control of patents was the basis of a nation-wide organization. In gas, the United Gas Improvement Company, which later extended into the electric field, has already been mentioned. The more recent developments in the natural-gas industry have been promotions by oil companies and by utility holding companies having control of distributing companies in large centers of consumption. In the electric utility industry, holding-company systems trace their origins to finance companies organized by the manufacturers of electrical equipment to promote the sale of equipment, to investment banking houses engaged in the flotation of utility securities, and to engineering interests occupied with supplying technical services to operating utilities. An analysis of the growth of particular holding-company systems will afford a concrete picture of the forces at work.

*Manufacturers' finance companies—The Electric Bond and Share Company.*⁴ The origins of the Electric Bond and Share Company are to be found in the efforts of manufacturers of electrical equipment to find a market for their products. The patents basic to the electric light and power industry were granted to Edison, Brush, Sprague, Bentley, and others in the late seventies and early eighties, and companies were formed to manufacture and sell the new equipment. But there were no markets for arc lights and incandescent electric lamps, for generating and distributing equipment, or for electric railway motors; the demand did not exist because there were no utility corporations. In order to create a market, manufacturers found it necessary to promote electric lighting companies and electric railways.

The early utility projects were highly speculative and encountered difficulties in raising capital. The manufacturers of electrical equipment were able to sell their products only by accepting payment in the form of securities. Where the electrical manufacturing companies also required the payment of license fees for the use of patented equipment, it was customary to take a certain proportion of the capital stock of the utility. The practice of accepting securities forced the manufacturers to devise methods of converting the securities

⁴ Federal Trade Commission, *Control of Power Companies*, Chapter V.

into cash, both to replenish their working capitals and to realize the profits with which to pay dividends. The popular device for realizing on these securities was the creation of a collateral trust by the deposit of the bonds and stocks of the utilities, and then selling securities, sometimes bonds and sometimes both bonds and stocks, on the pledge of the deposited collateral. Sometimes the obligations secured by the pledged collateral were distributed to the stockholders of the manufacturing corporation as a dividend.

The urgent problem for both the utility industries and the manufacturers was the development of the electric lighting and railway companies that would be able to sell their securities directly to the investing public for cash, thereby affording a cash market for the sale of electrical equipment. The first solution was the organization of the United Electric Securities Company in 1890 by the Thompson-Houston Electric Company. The United Electric Securities Company purchased part or all of the utility bond issues for which no market demand existed, and issued its own collateral trust bonds. In this way issues aggregating \$23,500,000, in thirty-nine series, were sold to the public. This device was taken over by the General Electric Company, which in 1904 organized the Electrical Securities Corporation to perform the same function. However, the utility financing problem could be permanently solved only by making equity stocks of the utility companies attractive to investors. The preponderance of utility financing through bond issues left the utilities particularly vulnerable to depression conditions, and resulted in a high cost of capital even for the senior securities. The financial structures of the early utilities were extremely crude, and were quite unadapted to the raising of new capital to finance the continuous growth of these companies.

There were two prerequisites to the attraction of adequate capital to the utility industries: the capital structures of utility corporations had to be balanced, with a due proportion of equity securities, and the earnings of the companies had to be adequate to give an investment character to all their securities. The first required a recapitalization of many existing companies and a program to raise a reasonable proportion of future capital requirements through the sale of junior securities. Bankers and investors had to be educated to accept financing in part by stock issues. The assurance of adequate and stable earnings called for an improvement in the management of the local, isolated plants and a more intensive development of the market for the utility services. Many companies were so small that even when they were on a sound financial basis their securities were not sufficiently well-known to attract capital outside the local community, and often the local community was unable to supply fully their capital requirements.

It was to accomplish these multiple purposes that the General Electric Company organized the Electric Bond and Share Company in 1905 under the management of S. Z. Mitchell. At its inception, Electric Bond and Share issued and sold \$1,000,000 of 6 per cent preferred stock to the public; an equal amount of common was issued to the General Electric Company in exchange for the securities of the local companies which the latter had accumulated. Although all the common stock was held by the General Electric Company

until 1924, Mr. Mitchell insisted that the Electric Bond and Share Company should not be under the domination of the parent company.⁵ The Electric Bond and Share Company thus began business with assets consisting of securities in operating utility companies scattered throughout the country.

The Electric Bond and Share program for the rehabilitation of its properties involved a fourfold policy. First, the Electric Bond and Share Company, although it negotiated many acquisitions and purchases of operating properties, did not continue as a direct holding company with respect to the operating utilities, but conveyed its holdings to sub-holding companies. In this way there were established the American Gas and Electric Company in 1906, the American Power and Light Company in 1909, the National Power and Light Company in 1921, the American and Foreign Power Company in 1923, and the Electric Power and Light Corporation in 1925.⁶ These sub-holding companies were not operating utilities, but each controlled operating properties scattered widely throughout the country. This principle of diversification of risk was one much emphasized by the Electric Bond and Share management.

Secondly, the Electric Bond and Share policy involved the organization of large regional operating companies. Where the holding company controlled several small utilities in the same part of the country, these subsidiaries were merged, if possible, into a single operating unit. This program sometimes required the acquisition of adjacent properties in order to achieve an economical organization. It was the objective of this policy to make each operating company sufficiently large and strong so that it might sell its bonds and preferred stocks directly to the investing public.

Thirdly, the process of organizing large regional operating companies afforded an opportunity to reconstitute the capital structures of the utilities so that future financing on advantageous terms would be possible. The old closed-mortgage bond issues were refunded into a single open-end issue. The utilities limited their outstanding bonds to 50 to 60 per cent of the capitalization and issued preferred stock amounting to 20 or 25 per cent; the remainder consisted of common stock. It was expected that the common stocks of the operating companies would be purchased and held by the sub-holding companies. The sub-holding companies paid for the common stocks of the operating utilities by the sale of their own bonds, preferred, and some of their common stock to

⁵ Thus it was understood that not more than one-third of the directors were to be representatives of General Electric, and that the remaining members of the board were to be selected by Mr. Mitchell, that the General Electric was to support Mr. Mitchell or change the management, and that the General Electric would not expect to sell equipment to Electric Bond and Share subsidiaries unless its terms were as good as, or better than, those offered by another manufacturer.

On December 30, 1924, in the face of an impending investigation into the electric-power industry, the General Electric Co. voted to divest itself of its stock in the Electric Bond & Share Co. This was accomplished by organizing the Electric Bond & Share Securities Corp., having as many shares of stock as the General Electric Company; the General Electric then conveyed all of its stock in the Electric Bond & Share Co. to the Electric Bond & Share Securities Corp. in exchange for all of the stock of the latter. The Electric Bond & Share Securities Corp. stock was then distributed as a stock dividend to the stockholders of the General Electric Co.

⁶ The Electric Bond & Share Co. was active in the formation of Utah Securities Corp. (1912), National Securities Corp. (1914), Power Securities Corp. (1919), and Lehigh Power Securities Corp. (1917).

the investing public, the Electric Bond and Share Company retaining only a minority interest in its sub-holding companies.

Fourthly, the Electric Bond and Share Company sought to improve the earnings of its operating companies by the organization of an expert staff to supply management, financial, engineering, and construction services. This arrangement not only supplied the utilities with highly competent technical skills for all aspects of construction and management, but it also afforded the Electric Bond and Share Company a very important source of revenue. These services were performed directly by the personnel of the parent holding company, with the exception of the construction work which was undertaken by separately organized subsidiaries.

*Organizations by engineering interests—Stone and Webster.*⁷ The building of utility plants calls for unusual technical competence, and it is not surprising that firms of consulting and construction engineers developed to supply this service. Like the manufacturers of electrical equipment, these engineering firms accumulated securities as payment for their services. Where the properties were growing rapidly, they were likely to be in fairly continuous contact with certain companies that became their clients. It was a natural outcome that these engineering firms should become the nuclei of holding-company systems. Thus the firm of Stone and Webster became possessed of an extensive system of properties, J. G. White became identified with the Associated Gas and Electric Company, the H. M. Byllesby interests established the General Gas and Electric Corporation in 1912. The story of Stone and Webster may be taken as illustrative of the tendencies arising out of these engineering relations.

Stone and Webster was the earliest service organization to develop in the electric power field. The firm began business as consulting and designing engineers in 1889. It also operated an electrical testing and experimental laboratory. Then, in order to assure the proper carrying out of its plans, it was necessary not only to accept the supervision of the construction but also to hire the construction crews and assume full responsibility for the work; thus it was in the construction business. The third step came in the 1890's, when some bankers who were interested in a Massachusetts utility asked the firm to investigate and report why the earnings of the utility were not more satisfactory. The report revealed so many opportunities for improvement that Stone and Webster was asked to operate the property, and for this purpose it organized a small staff of managers and supervisors. The next step followed from a desire to secure full employment for the staff of supervisors and managers; contracts were obtained for the management and supervision of other properties. The depression of 1893 provided the occasion for the fourth phase; the prices of utility securities fell to low levels, so that certain bankers saw an opportunity for profit in buying control of unprofitable companies at low prices and reselling when the earnings and financial condition of the properties improved. Stone and Webster was invited to join with these bankers and take charge of the rehabilitation of the properties. A fifth branch of the business arose from the need of the company's utility clients for additional funds. As a means of securing contracts for designing and construction work, Stone and Webster

⁷ *Control of Power Companies*, Chapter XV.

assisted these companies in raising capital, at first simply by taking their securities and marketing them for what they would bring, and subsequently by organizing underwriting syndicates. Since underwriting called for a study of general market conditions as well as of the securities of the particular utility, Stone and Webster developed a banking department and was soon engaged in a general underwriting business, participating in syndicates managed by other bankers for utilities that were not necessarily clients of Stone and Webster. In the process of selling underwritten securities, the securities department engaged in creating a secondary or resale market, and by 1910 the company was associated with other banking houses in sustaining the market for particular securities. Finally, other requirements of the business led to new activities: an insurance department afforded expert advice to clients; a commercial-sales department advised clients on methods of increasing their volume of business.

In summary Stone and Webster began business as professional engineers; and each expansion was the result of seeking to improve the services which the firm was already rendering, or an attempt to obtain business in sufficient volume to reduce unit costs, or a natural outgrowth of the activities upon which it had already entered. It was not originally the policy of the firm to acquire and hold the voting control of the companies that were its clients. The expansion of other holding companies, however, involved the acquisition of some of the Stone and Webster clients and the termination of the contracts which those utilities had with Stone and Webster. As a protective measure, Stone and Webster began rather tardily to acquire the voting control of client companies, and in 1925, the Engineers Public Service Company was organized for the purpose of acquiring and holding control of operating utilities.

Investment bankers' companies. A number of holding-company systems had their origins in the activities of various investment banking groups. The North American Company (1890) and the American Light & Traction Company (1901) were organized to take over the investment holdings of certain banking interests. The National Public Service Corporation was the creature of the banking firm of A. E. Fitkin and Company. The super-holding company, the United Corporation, was organized in 1929 by J. P. Morgan and Company partly to provide an outlet for utility stocks accumulated by its Philadelphia branch, Drexel and Company.

CORPORATE ORGANIZATION OF HOLDING-COMPANY SYSTEMS. There has been no uniform pattern to which the corporate structure of utility holding-company systems has conformed. Expediency, convenience, and the opportunity for a speculative profit ruled in the period of growth and accretion, and holding-company systems have presented a picture that could not have been duplicated by deliberate forethought and planning. The height of complexity was reached in the late 1920's before the crash. Since 1929, there has been a measure of simplification in holding-company organization, forced partly by financial necessity or even by receivership proceedings, and since 1935, induced partly by the necessity of conforming to the standards of the Public Utility Holding Company Act. Since the holding-company systems are now undergoing reorganization in response to the pressures of the Securities and Exchange Commission, and since this process of reorganization can be intelligently discussed

only as a part of the regulatory program with respect to holding companies, the present descriptive analysis will be concerned with the holding-company system as it developed prior to the passage of the Public Utility Act of 1935.⁸

There has been no uniformity in the size or scope of the holding-company organizations. Some systems have numbered their subsidiaries at more than a hundred; others included less than a score of companies. Some companies controlled properties scattered the length and breadth of the land; others were composed of a closely integrated group of properties. No simple relation prevailed among the companies within the system. Some holding-company systems exhibited extremes of pyramiding, six or more companies intervening between the underlying operation companies which owned the income-producing properties and the final source of control and policy-making. Even individual companies within the system have not conformed to a clear-cut classification: some were pure holding companies; some were pure operating companies; some were both operating and holding companies; and others functioned as specialized affiliates performing a variety of services for the member companies.

A schematic representation of holding-company organization. For purposes of exposition only, Chart 1 presents an oversimplified schematic diagram of a holding company's organization. The top-holding company functions as the policy-making head for the entire system. Commonly the top-holding company does not directly control the operating utilities; its assets consist of the securities, usually the common stocks, of the sub-holding companies and of the non-utility affiliates. In some systems the top-holding company performs a variety of services for the constituent companies, while in others these services are entrusted to affiliated organizations. Theoretically, the control which the top-holding company exercises is transmitted through the voting stock which it holds in the sub-holding companies, but practically there has usually been an identity of officials between the members of the system that would assure adherence to a common policy.

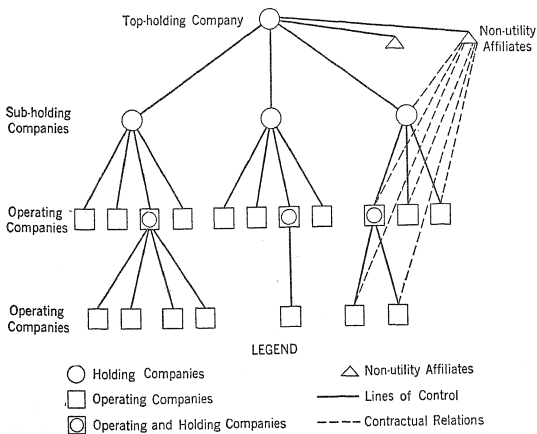
The sub-holding companies perform two continuing functions in the holding-company system. Less significantly, they hold the voting securities of the operating utilities and serve as the channel through which the top-holding company makes its policies effective; but there is no reason why the top-holding company could not control directly the operating companies. The essential function of the intermediate, or sub-holding, companies is to add another tier to the corporate pyramid. The injection of additional intermediate companies between the top and the income-producing properties at the base of the pyramid both reduces the capital investment required by the holding company in order to exercise control and increases the rate of earnings on the investment of the top-holding company. In some systems, a sub-holding com-

⁸ The materials for this treatment of the holding company are drawn largely from the investigation into electric and gas holding companies inaugurated by the Federal Trade Commission in 1928. The last report was issued in 1937. The hearings and reports numbered more than 80 parts and together they constitute the most thoroughgoing investigation of an American industry that has ever appeared. Their official designation is: Federal Trade Commission, *Utility Corporations*, 70 C., 1 s., Sen. doc. 92, Part —. As occasion requires, these reports will be cited under their short title, *Utility Corporations*.

pany was organized to hold the control of all of the operating companies located in a particular geographic section; while in other systems the diversity principle prevailed and each active sub-holding company was given operating companies scattered widely throughout the country.

The sub-holding company has also served a number of more limited ends. (1) A corporation may be continued in order to preserve certain special privileges or advantages conferred by the charter or franchise under which it operates. Very often these are corporations with a long history, such as the

CHART 1
SCHEMATIC DIAGRAM OF HOLDING-COMPANY ORGANIZATION



Philadelphia Company, whose charters originated with a special act of the legislature. (2) Sometimes a sub-holding company serves to circumvent certain legislative or contractual provisions. For example, the Northern States Power Company (Delaware) was organized by the Byllesby interests to hold certain double-liability stocks, substituting its single-liability stock for issuance to individual investors. A foreign corporation may serve to escape a prohibition against one domestic utility acquiring control of another. (3) Intermediate holding companies were frequently used in the 1920's to enable individuals to delay income taxation of capital appreciations. (4) The sub-holding company may be the means of segregating particular assets, for example, when there is a purchase-money lien against them. (5) The sub-holding company has been extensively utilized to enable subsidiaries to issue stocks qualifying as "fully paid and nonassessable."

The operating utilities at the base of the pyramid are the legal owners of the real properties which produce the income for the entire system. Their senior securities are commonly held by the investing public and are ordinarily without voting power. Their voting stocks, sometimes in their entirety, are held by intermediate holding companies. As with the intermediate holding companies, the key officers and directors of the operating utilities have commonly been drawn from the directors, officers, and personnel of the top-holding company or its affiliates. Some, perhaps most, of the operating utilities are purely operating companies; but other utilities not only own physical plant and equipment and actively engage in the rendition of a public service, but are also parent companies with their own subsidiary operating companies.

The non-utility affiliates are in reality incorporated departments of the top-holding company. In most systems these affiliates receive all of their capital from the top-holding company. They function as service agencies to supply managerial, financial, engineering, construction, and other services for the intermediate holding companies and their operating subsidiaries.

The pyramiding principle. The pyramid has constituted such a characteristic feature of holding-company organizations that its essential significance for investors, consumers, and management requires close analysis. The pyramid has been the device by which the top-holding company has exercised control with little or no actual investment and by which the moderate rates of return of the underlying operating utilities have been transmuted into earnings of several hundred per cent on the stock equity receiving the residual income. A concrete example, even though hypothetical, will serve to illustrate the workings of the public utility pyramid. Table 18 presents such an example.

The hypothetical holding-company pyramid is based upon the following assumptions:

(1) That the investment in the operating properties amounts to \$1,000,000, and that there has been no write-up or inflation in the investment;

(2) That the capital structure of the operating utilities is one-half 5 per cent bonds, one-quarter 6 per cent preferred stock, and one-quarter common stock;

(3) That the holding company at each level owns all of the common stock of the subsidiaries next below it;

(4) That the holding companies all have identical capital structures, namely, one-half in 5 per cent bonds, one-quarter in 7 per cent preferred stock, and the remaining quarter in common stock;

(5) That for the holding company only the earnings from investments in subsidiaries need be reported; that other holding-company earnings from fees, et cetera, may be assumed to offset the expenses of holding-company operations;

(6) That the fair rate of return on the investment of the operating utilities is 7 per cent;

(7) That the significance of changes in the earnings of the operating companies may be illustrated by assuming that the utilities first earn 8 per cent on their investment, and then that they earn only 5 per cent; and

(8) That only the common stock has voting rights.

The "pyramiding of control" may be illustrated by considering first the col-

TABLE 18
HYPOTHETICAL HOLDING-COMPANY PYRAMID

Company and its capital structure	Investment	Income and its divisions					
		8 per cent	Per cent	7 per cent	Per cent	5 per cent	Per cent
Operating companies							
50 per cent bonds, 5 per cent	\$500,000	\$25,000	5	\$25,000	5	\$25,000	5
25 per cent preferred stock, 6 per cent	250,000	15,000	6	15,000	6	15,000	6
25 per cent common stock	250,000	40,000	16	30,000	12	10,000	4
Total	\$1,000,000	\$80,000	8	\$70,000	7	\$50,000	5
First-degree holding company							
50 per cent bonds, 5 per cent	125,000	6,250	5	6,250	5	6,250	5
25 per cent preferred stock, 7 per cent	62,500	4,375	7	4,375	7	3,750	6
25 per cent common stock	62,500	29,375	47	19,375	31	—	—
Total	250,000	40,000	16	30,000	12	10,000	4
Second-degree holding company							
50 per cent bonds, 5 per cent	31,250	1,562.50	5	1,562.50	5	—	—
25 per cent preferred stock, 7 per cent	15,625	1,093.75	7	1,093.75	7	—	—
25 per cent common stock	15,625	26,718.75	171	16,718.75	107	—	—
Total	62,500	29,375	47	19,375	31	—	—
Third-degree holding company							
50 per cent bonds, 5 per cent	7,812.50	390.63	5	390.63	5	—	—
25 per cent preferred stock, 7 per cent	3,906.25	273.44	7	273.44	7	—	—
25 per cent common stock	3,906.25	26,054.68	668	16,054.68	412	—	—
Total	15,625	26,718.75	171	16,718.75	107	—	—

um "Investment." It has been customary for the voting rights in each operating and holding company to be confined solely to the common stock. While it would not be necessary for a holding company to control more than a majority of the voting stock, it is both more conservative and simpler to assume that each holding company owns all of the voting shares of the companies next below it in the pyramid. Thus, it will be observed that the first-degree holding company is able to control \$1,000,000 of investment, and is in turn controlled by only \$62,500 of investment, or the control is reduced from

25 per cent to $6\frac{1}{4}$ per cent. The second-degree holding company's control rests on an investment of 1.5625 per cent, and that of the third-degree holding company, on an investment of only 0.39 of 1 per cent. Even without any stock-watering, the investing public assumed virtually *all* of the risks for the fallacious shadow of security that was implied in the name "bond" or "preferred stock." Where there were write-ups and inflation of assets and securities, the investing public not only supplied all of the capital required to erect these holding companies, but they also paid huge speculative profits to the promoters in the form of cash and securities.

The fair rate of return has been assumed to be 7 per cent. It should be noted that, when the overall earnings of the operating property are 7 per cent, the earnings applicable to that common stock are 12 per cent. This is a result of raising three-quarters of the capital by senior securities having only limited rights to participate in earnings. Since the first-degree holding company owns all the common stock of the operating companies, its overall rate of earnings is 12 per cent, or \$30,000. But only \$6,250 is required for bond interest and \$4,375 for preferred dividends, so that the residual earnings on its common stock of \$62,500 is \$19,375, or 31 per cent. The addition of a second-degree holding company raises the rate of earnings on its common-stock equity to 107 per cent, and the third-degree holding company boosts it to a phenomenal 412 per cent. Under these assumptions, those who have supplied 0.39 of 1 per cent of the investment are the residual claimants to 22.9 per cent of the net income produced by an investment of \$1,000,000.

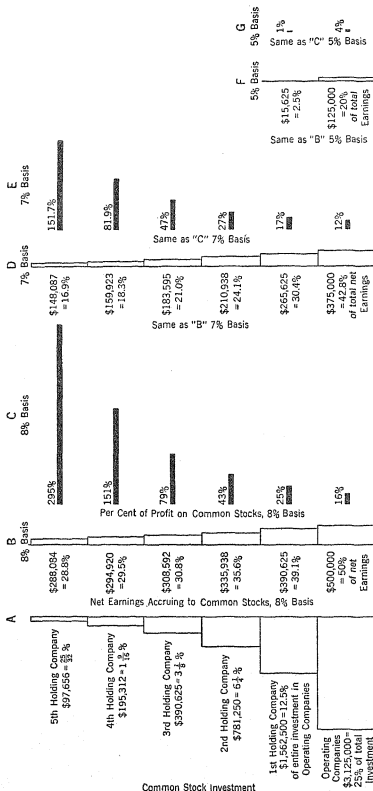
If it be assumed that the operating companies succeed in increasing their net return to 8 per cent, the results are startling indeed.⁹ Every dollar of the increased earnings accrues to the holders of the common stock of the top-holding company; the public investors, who have supplied 99 per cent of the capital with which the earnings are produced, are in no way benefited, unless the greater earnings coverage causes the market prices of their securities to rise so that they can sell to better advantage. The rate of earnings on the common stock of the top-holding company is lifted to 668 per cent, and those who supplied 0.39 of 1 per cent of the investment receive 32.3 per cent of the net earnings. Every change in the net earnings of the operating companies produces a dollar-for-dollar change in the earnings of the top-holding company, although in percentage terms the magnitude of the change is magnified. This situation will explain why the holding companies were so keen to increase the earnings of their operating subsidiaries and why they opposed so violently any attempt to reduce the earnings of the operating utilities.

The real nature of the public's investment in the holding-company pyramids may be illustrated by assuming that the net earnings of the operating utilities declines to 5 per cent. This is not an unreasonable assumption, for such a result would follow a shrinkage of approximately 29 per cent in the gross earnings of the operating companies. The earnings on the common stock of the operating utilities would be only 4 per cent, and that would be the rate of earnings on the investment of the first-degree holding company. Earnings

⁹ Such an increase in earnings might result from a successful petition for an increase in rates, or it might arise from a reduction in operating costs.

CHART 2

THE HOLDING COMPANY PYRAMID: THE ATTENUATION OF INVESTMENT CARRYING CONTROL, THE ACCRUAL OF OPERATING COMPANY EARNINGS TO COMMON STOCKS OF THE SEVERAL HOLDING COMPANIES AND THE RATE OF PROFIT UPON INVESTMENT APPORTIONED TO COMMON STOCK OF EACH HOLDING COMPANY, WITH FINANCIAL STRUCTURE AS STATED AND RATES OF NET EARNINGS UPON ENTIRE UNDERLYING PROPERTY INVESTMENT AT 8, 7, & 5%



- Scheme of Financing
- (1) Operating Companies 50% of Investment in 5% Bonds
25% of Investment in 6% Preferred Stock, non-voting
25% of Investment in Common Stock, voting
 - (2) Holding Companies 50% non-voting, Preferred Stock, 7% dividends
50% voting Common Stock
 - (3) Each Holding Company owning all of Common Stock of its immediate subsidiary

* Source: *Utility Corporations*, No. 72-A, Chart XI, facing p. 162.

of \$10,000 for the first holding company would be insufficient by \$625 to pay the dividends on its preferred stocks, and of course, there would be no earnings whatever for any of the security holders in the second- and third-degree holding companies. The holding-company pyramid is a fair-weather structure and it is not surprising that many collapsed during the depression years. From this example, it appears that the bonds and preferred stocks of holding companies which own only the common stocks of operating properties or other holding companies are only preferred claims on deferred claims to the residual earnings of the real properties; and when earnings shrink, the fact that they are "deferred claims to residual earnings" (many times "deferred," as holding company is piled on top of holding company) becomes very much more important than the fact that they are "preferred claims" with respect to the particular corporation issuing them.

The principle of the pyramid is sufficiently important to justify a reference to an example included in the Federal Trade Commission's report on the economic and financial aspects of holding companies. Chart 2 represents a pyramid of five holding companies resting on a total uninflated investment of \$12,500,000. In this example the assumptions with respect to the capital structure of the holding companies are even more conservative: the operating companies are financed one-half by 5 per cent bonds, one quarter by 6 per cent preferred stock (non-voting), and one-quarter by common stocks. Each holding company owns all the common stock of its immediate subsidiary and is financed one-half by 7 per cent non-voting preferred stock and one-half by common. Column A shows only the common-stock investment at each level and, in figures, the percentage which the common stock of each company is to the total investment of the operating utilities at the bottom of the pyramid. It thus appears that an investment of \$97,656 (or $\frac{25}{32}$ of 1 per cent) represents the ultimate voting control in a system of \$12,500,000.

Columns B and C show the net earnings accruing to the common stock on the assumption that the overall net return on the investment in the operating utilities is 8 per cent. Column B shows both the net earnings (blocks and figures) accruing to the common stock of each company in the pyramid, and the percentage which those earnings are of the total net earnings of the underlying operating companies. Column C shows the percentage earnings on the common stock of each company. It will be observed that the leverage in lifting the rate of common-stock earnings is somewhat less than in the previous example, where the common-stock issue was smaller by reason of the issuance of bonds by the holding companies. Still, earnings of 151 per cent and 295 per cent are noteworthy. In this example the pyramid is carried somewhat higher and in that respect conforms more closely to the holding structures which were actually found in the period that the Federal Trade Commission was studying. However, most of the holding companies did resort to the issue of bonds and they thereby benefited from the lower rate of interest payable thereon. Columns D and E present the same information as Columns B and C, but here it is assumed that the rate of net earnings on the entire properties of the subsidiary operating companies is 7 per cent. And Columns F and G show the situation when the earnings of the operating utilities are on a 5 per

cent basis. In most of the holding-company systems there was considerable inflation in the asset accounts and in the capitalizations of both operating companies and holding companies, which further enhanced the pyramiding effects.

Actual holding-company pyramids. Did the practice of pyramiding conform to the abstract illustrations that have been here presented? In actuality, pyramiding was carried to extremes not indicated by these hypothetical illustrations, and the pyramiding effects were accentuated by devices other than those already described. In some systems more than five companies were superimposed on the lowest tier of operating properties. In almost all of the systems there were write-ups and inflation of assets and capitalization with respect to the operating properties and there were also substantial write-ups by the holding companies. These write-ups served further to reduce the real investment with which control was acquired and maintained. In other holding-company systems, as will subsequently be noted, there were no significant write-ups either by operating properties or by holding companies, and the capital structures were not designed to take the maximum advantage of the pyramiding principle.

A second device by which the pyramiding effects were magnified was the introduction of different classes of common stock, with voting rights so arranged as to permit the management to exercise control with little investment. In its earlier report, the Federal Trade Commission described a capital structure through which the Standard Gas and Electric Company had pyramided control until an investment of less than \$1,000,000 exercised dominion over a system with a reputed investment of \$370,000,000.¹⁰ Other equally extreme

¹⁰ "The capital securities of the Standard Gas & Electric Co. on December 31, 1924, were as follows:

	<i>Shares</i>	<i>Par or book value</i>
Common stock	302,693	\$11,650,654
Noncumulative stock	1,000,000	1,000,000
Preferred stock	330,000	16,500,000
Prior preference stock	125,000	12,500,000
Total stock	1,757,693	41,650,654
Bonds .....	.....	12,817,100
20-year notes .....	.....	15,000,000
Total capital securities .....	.....	69,467,754

"The preferred and prior preference stocks were ordinarily without voting power. The other two classes had equal voting power. It is remarkable that stock representing an investment of \$1 per share should be given equal voting power, share for share, with stock representing an investment of \$38.49 per share. Hence \$12,651,000 of investment represented by these stocks had all the voting rights in a total corporate capital of nearly \$69,500,000. Furthermore, the holder of the 1,000,000 shares of noncumulative stock, with an investment of only \$1,000,000 possessed the voting control over not only this \$69,500,000 but of the entire investment in the company's multitude of subsidiaries. Indeed, ownership of 652,000 of these shares would have conferred that degree of control. As before stated, 997,111 of those shares stood in the name of R. J. Graf, who was the nominee of H. M. Bylesby & Co., so that an investment of less than \$1,000,000 in these shares of the chief holding company conferred the voting control of a total investment of over \$370,000,000. Furthermore, the investment of \$12,651,000 in the common and noncumulative stocks together was the residuary beneficiary of all the income produced by this \$370,000,000 of total investment." (*Control of Power Companies*, p. 192.)

examples of pyramided control were revealed in the organization charts of other holding companies.

Did any of the holding companies report such earnings as have been indicated in the preceding illustrations? Here the answer must be negative, but there is good reason to assume that rates of earnings approximating those indicated were realized at times by some of the systems. The rates of earnings of some of the holding companies are summarized in Table 19. While these

TABLE 19 *

RATES OF EARNINGS OF SPECIFIED HOLDING-COMPANY GROUPS ON TOTAL INVESTMENT AND ON COMMON-STOCK EQUITY OF THE HOLDING COMPANY AS SHOWN IN PUBLISHED CONSOLIDATED BALANCE SHEETS AND INCOME STATEMENTS, 1924 AND 1925

Holding-company group	Rates of earnings			
	1924		1925	
	Total investment	Common-stock equity	Total investment	Common-stock equity
Electric Bond & Share companies:				
American Power & Light Co.	14.53	34.81	15.80	40.50
National Power & Light Co.	13.06	16.50	—	—
Other large companies:				
North American Co.	16.45	28.23	—	—
Middle West Utilities Co.	12.20	19.03	12.37	21.46
Standard Gas & Electric Co.	14.77	55.22	14.96	37.58

* Source: *Control of Power Companies*, p. 45.

earnings are high, they are neither startling nor fantastic. What is the explanation of the apparent discrepancy between the earnings reported and those that might be expected to result from pyramiding? Some of the explanatory circumstances may be suggested. First, where there is a significant degree of inflation in the capital accounts of the operating and holding companies, with the accompanying inflation in the volume of outstanding securities, the apparent rate of earnings on the *book value* of the investment may be only a fraction of the real rate of earnings on the *actual* investment. Secondly, where the top-holding company supplies various services to the operating companies through directly controlled affiliated corporations, the operating expenses of the utilities may be overstated and their net earnings understated; this would result in a lower rate of earnings for the intermediate companies although there would presumably be the same rate of earnings for the top-holding company. Thirdly, many of the holding companies paid extravagant prices for the properties which they acquired, as measured by either the investment in, or the earnings on, the securities acquired.¹¹ In some instances the stockhold-

¹¹ *The Report of the Special Commission on Control and Conduct of Public Utilities* listed the consideration paid by various holding-company systems for properties acquired in Massachusetts. The following tabulation * lists the "Capital Stock and Paid-In Premium," "Dividends

ers were reluctant to sell their securities. In other instances the property was strategically important to the particular holding company and had to be acquired from other, perhaps holding-company, interests. Also, the prices were sometimes bid to ridiculous heights by the competition of two companies for the same properties.¹²

The discussion of pyramiding may be made concrete by considering the

[Footnote 11 (continued)]

Paid," and the "Consideration Paid" by the Associated Gas and Electric system for some of its properties.

	Capital Stock and Premium	Other Capital	Dividends Paid Three Years	Per Cent of Stock Owned	Consideration Paid for Stock
Cambridge Electric Light Co.	\$1,560,000.00 (\$25 par) (Prem. \$778,000.00)	—	1926 \$6.00 1927 \$6.00 1928 \$1.00	99.99	\$11,799,820.34
Cambridge Gas Light Co.	\$1,950,000.00 (\$25 par) (Prem. \$1,210,007.50)	—	1926 \$3.00 1927 \$3.00 1928 \$0.75	99.90	8,334,066.42
Cape & Vineyard Electric Co.	\$750,000.00 (\$25 par)	—	1926 \$1.50 1927 \$6.00 1928 ¹ —	100.00	1,224,548.93
Worcester Gas Light Co. Preferred	\$2,050,000.00 (\$25 par)	—	1926 \$4.00 1927 \$4.00 1928 ² —	100.00	7,020,883.67
Common .....	.....	.....	1926 \$2.50 1927 \$2.50 1928 ² —		
Middlesex County Electric Co.	\$50,000.00 (\$25 par)	—	1926 \$12.50 1927 \$4.00 1928 ³ —	100.00	90,642.19
Dedham & Hyde Park Gas & Electric Co.	\$500,000.00 (\$25 par) (Prem. \$52,845.00)	\$100,000 ⁴	1926 \$2.50 1927 \$2.50 1928 \$2.00	89.22	892,534.00
West Boston Gas Co.	\$2,209,725.00 (\$25 par)	350,000 ⁵	1926 \$2.00 1927 \$1.50 1928 \$1.00	96.50	4,438,536.00
New Bedford Gas & Edison Light Co.	\$5,342,400.00 (\$25 par) (Prem. \$3,081,267.95)	3,817,000 ⁴ 762,000 ⁵	1926 \$4.00 1927 \$4.00 1928 \$4.00	— ⁶	— ⁶
Total capital stock and premium	\$20,474,925.45	—	—	—	—

¹ All preferred stock called in 1928.

² All preferred stock called July 1, 1927.

³ All preferred stock reacquired by company in 1928 and now held in company's treasury.

⁴ Bonds.

⁵ Corporation notes.

⁶ Acquired December, 1929; information not yet available.

* Source: Mass. House Doc. No. 1200 (1930), p. 151.

¹² In these inter-system struggles the winner was often the loser. The Federal Trade Commission describes one such competitive acquisition:

"At the beginning of 1929, Barstow Securities Corporation controlled W. S. Barstow & Co., Inc., which, in turn, controlled General Gas & Electric Corporation, a holding company, which controlled Metropolitan Edison Co., New Jersey Power & Light Co., Binghamton Light &

actual corporate organization of one of the more prominent holding-company systems. Chart 3 pictures the composition and intercorporate relations of the Electric Bond and Share system. The subsidiary and affiliated companies are classified into four groups. Group I is composed of those companies all of whose voting stock is held by Electric Bond and Share; as their titles suggest, the companies in this group are the non-utility affiliates that function as service organizations. They are commonly controlled directly by the top-holding company because they represent an important channel of earnings direct from the operating properties to the top-holding companies. Group II consists of three sub-holding companies and their subsidiaries. Although the Electric Bond and Share owns only minority interests in these intermediate holding companies, the control is nevertheless wholly effective since these corporations all have a substantial proportion of directors and officers in common. As the lines of control and symbols indicate, there are numerous tiers of holding and operating companies between the Electric Bond and Share and the underlying operating properties, pyramids of five companies occurring frequently. Group III is composed of the American Gas and Electric Company and its subsidiaries; the Electric Bond and Share Company derives income from its investments in this sub-holding company and performs financial services for it and its subsidiaries, but its subsidiary service affiliates do not perform any of the other managerial functions, the American Gas and Electric Company having its own service staff. Group IV consists of various investments in other holding-company systems. These minority interests do not indicate any control of these companies by the Electric Bond and Share Company, although in some instances Electric Bond and Share directors have been prominent as officers and directors of these companies.

EXTENT OF HOLDING-COMPANY CONTROL. From 1911, when the first report was made on the extent of holding-company control in the utility field, until

Power Co., Northern Pennsylvania Power Co., Florida Public Service Co., Lexington Water Co., Broad River Power Co., and various other smaller companies.

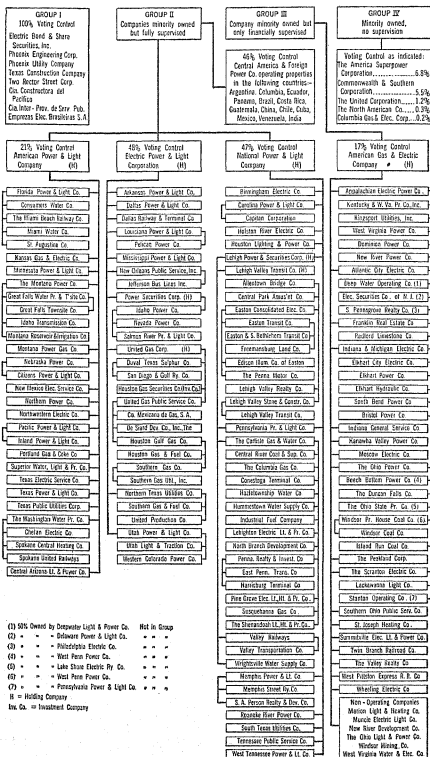
"The properties controlled by General Gas & Electric Corporation were desired by Associated Gas & Electric Co., and also by the United Gas Improvement Co. In February, 1929, Associated Gas & Electric Co. purchased 94,005 shares of Barstow Securities Corporation and 11,760 shares of W. S. Barstow & Co. (Del.) for the sum of \$49,923,855. The purchase of this stock carried with it control of W. S. Barstow & Co., which in turn controlled General Gas & Electric Corporation. As of December 31, 1928, Barstow Securities Corporation had no surplus and its only assets were cash to the amount of \$3,565 and 94,005 shares of the stock of W. S. Barstow & Co., Inc. Therefore, the value of 94,005 shares of Barstow Securities Corporation acquired by Associated Gas & Electric Co. was the value of the same number of shares of W. S. Barstow & Co. (Del.) owned by the Securities Corporation plus \$3,565 of cash. As computed by the Commission's accountants, the book value of these 105,765 shares was \$314,614, or \$2.97 per share. For this stock, Associated Gas & Electric paid \$49,923,855, or \$472.03 per share. The price paid was 159 times the ledger value of the shares purchased. For the year 1928 the income of W. S. Barstow & Co., Inc., available for common stock was \$4.16 per share or only 88/100 of 1 per cent based upon the price of \$472.03 paid by the Associated Gas & Electric Co.

"It appears that the principal reason for paying such an extravagant price for control of General Gas & Electric Corporation, was on account of the fact that another holding company, namely, the United Gas Improvement Co. had acquired a large minority interest in General Gas & Electric Corporation. In April, 1929, this large minority interest was acquired by the Associated from the United Gas Improvement interests at a price that netted the latter a profit of approximately \$9,300,000." (*Utility Corporations*, No. 72-A, p. 64.)

CHART 3*

ELECTRIC BOND & SHARE CO.

CORPORATE AND MANAGEMENT RELATIONS, OCTOBER 1, 1933



(1) 50% Owned by Deepwater Light & Power Co. Not in Group
 (2) + = Delaware Power & Light Co. - - -
 (3) + = Philadelphia Electric Co. - - -
 (4) + = West Penn Power Co. - - -
 (5) + = Lake Shore Electric Pr. Co. - - -
 (6) + = West Penn Power Co. - - -
 (7) + = Pennsylvania Power & Light Co. - - -
 H = Holding Company
 Inc. Co. = Investment Company

* Source: *Utility Corporations*, No. 72-A, Chart II, facing p. 88.

the recently completed reports of the Federal Trade Commission, each investigation has revealed increasing concentration of control among utility corporations. In 1911, the Bureau of Corporations found that 60 per cent of the commercially developed hydroelectric power of the country was controlled by ten interests.¹³ In 1914, a survey by the Forest Service of the Department of Agriculture reported that 85 corporations controlled 68.6 per cent of the total installed generating capacity of the electric utilities, and that 35 controlled one-half of that total, 16 controlled one-third, and 10 controlled one-fourth.¹⁴ Yet it could not be said that in 1914 the holding company was dominant in the electric field.

The Federal Trade Commission's investigation of power companies in 1924 indicated that the holding companies had obtained a dominant position in

TABLE 20

SUMMARY OF DISTRIBUTION OF CONTROL OF THE ELECTRIC UTILITY INDUSTRY
IN 1924 *

Group	Proportion of control			
	Installed generating capacity	Quantity Generated	Quantity sold	Gross Revenue
	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>
General Electric group	13.3	13.0	14.2	13.7
Insull group	8.9	8.9	8.3	9.6
North American group	6.6	7.4	7.6	6.1
Byllesby group	5.5	5.2	4.5	5.2
Hodenpyl-Hardy group	2.8	2.8	2.1	2.7
Cities Service group	2.5	2.3	2.1	2.5
Stone & Webster group	2.3	2.3	2.2	2.2
Total above	41.8	41.9	41.0	42.0
Other holding companies	24.4	21.5	24.9	25.0
Holding-company total ...	66.2	63.4	65.9	67.0
Large local companies and unit developments	28.4	31.6	29.3	26.1
Small local companies	5.4	5.0	4.8	6.9
Total privately owned	100.0	100.0	100.0	100.0

* Source: *Utility Corporations*, No. 72-A, p. 36.

the electric utility industry. Approximately two-thirds of the industry was grouped in holding-company systems. The General Electric Company's interests (chiefly Electric Bond and Share Company) was the largest single group, constituting some 13 per cent of the privately owned industry. Seven groups accounted for nearly 42 per cent of the industry, large local companies for 28 per cent, and small local companies for 5 per cent, in terms of installed generating capacity. The details are presented in Table 20.

¹³ *Utility Corporations*, No. 72-A, p. 35.

¹⁴ *Ibid.*, p. 35.

Through the late 1920's the trend toward concentration among electric utilities continued, with super-holding companies acquiring control of, or substantial interests in, other holding-company systems. The most important system was that of the United Corporation, incorporated in 1929, which accounted for approximately 20 per cent of the energy generated. The Electric Bond and Share ranked second with 14 per cent, and the Insull interests, third with 10 per cent. Thus the three largest groups generated some 45 per cent of the total for private utilities. The sixteen largest holding-company groups accounted for over three-quarters of the industry's output. Table 21 ranks the holding-company systems in order of their output for the years 1929 and 1932.

Since 1932 the tendency toward concentration has been reversed. A number of the leading holding companies have been forced into receivership and are now in process of reorganization. Since 1935 it has been the declared policy of the federal government to effect a reorganization of the electric and gas industries in the direction of a simplification of holding-company systems. In response to this legislation, some holding-company systems have divested themselves of control of those properties that did not permit them to meet the standard of an "integrated public-utility system" and others are in process of simplification.

MOTIVES FOR HOLDING-COMPANY BUILDING. Many motives and causes have been operative at different times in the building of the utility systems. All cannot be unearthed and enumerated, but the principal factors that operated to stimulate the formation of holding companies require passing mention.

Profits. The profit motive was everywhere present in the growth of holding-company empires. Sometimes the profits sought were immediate and speculative; sometimes they were long-term profits; sometimes the profit-motive was sensitive to the requirements of the public interest, and at other times it was not. The first opportunity for profits came through the operation of the pyramiding principle. By piling one company on top of another, the process of addition became one of multiplication, and moderate rates of earnings on the properties of the operating utilities were transmuted into handsome earnings for the common stock of the top-holding company.

Secondly, profits could be secured through economies in the conduct of the operating utilities. The nature of these economies will be analyzed subsequently.

Thirdly, the mere control of large operating properties presented opportunities to exercise that control for financial advantage. The commonest means of turning the control to profit was the development of non-utility affiliates to perform services for the operating companies. If the services benefited the operating properties, the holding company would enjoy a larger income in its capacity as a holder of the common stocks of the sub-holding companies. But even if the services did not increase the net earnings of the operating company, the holding company would still benefit from the fees earned by its affiliates. If the commission in setting the rates for the operating companies could be persuaded to recognize the charges of the service organizations as appropriate items of operating expense or capital expense, the holding company might expect to profit both as an investor and as a manager.

TABLE 21

PERCENTAGE OF ELECTRIC ENERGY GENERATED BY HOLDING-COMPANY GROUPS,
LARGE LOCAL COMPANIES AND SMALL COMPANIES IN 1929 AND 1932,
RANKED ACCORDING TO OUTPUT PRODUCED IN 1929 *

Group	Per cent of United States total	
	1929	1932
United Corporation group:		
Commonwealth & Southern Corporation	6.7	5.9
Niagara Hudson Power Corporation	6.3	6.0
United Gas Improvement Co., The	4.3	4.2
Public Service Co. of New Jersey	2.1	2.4
Columbia Gas & Electric Corporation	1.4	1.3
Total	20.8	19.8
Electric Bond & Share Co.:		
American Power & Light Co.	5.4	4.4
American Gas & Electric Co.	4.4	3.8
Electric Power & Light Corporation	2.5	2.3
National Power & Light Co.	2.0	3.1
Total	14.3	13.6
Insull interests:		
Commonwealth Edison Co.	4.4	2.7
Middle West Utilities Co.	3.7	3.6
Midland United Co. ....	.9	1.1
State Line Generating Co. ....	.6	1.2
Super Power Co. of Illinois .....	.5	1.6
Public Service Co. of Northern Illinois .....	.2	.8
Western United Corporation	—	.1
Total	10.3	11.1
North American Co., The	7.4	5.6
Consolidated Gas Co. of New York	5.4	6.5
Standard Power & Light Co. (Byllesby)	5.0	4.9
Associated Gas & Electric Co.	2.9	2.4
Stone & Webster, Incorporated	2.7	2.3
American Water Works & Electric Co., Inc.	2.2	1.9
Duke Power Co.	2.0	1.7
Cities Service Co.	1.9	1.3
New England Power Association	1.6	2.0
United Light & Power Co.	1.5	1.4
Central Public Service Corporation .....	.8	.7
Utilities Power & Light Corporation .....	.7	.5
North American Light & Power Co. ....	.7	.7
Total	34.8	31.9
Total above	80.2	76.4
Other holding companies	2.1	2.4
Holding company total	82.3	78.8
Large local companies	12.1	13.4
Small local companies	5.6	7.8
Total privately owned	100.0	100.0

* Source: *Utility Corporations*, No. 72-A, p. 38.

Fourthly, large and immediate speculative profits were received in the organizing of holding-company systems and in selling their securities to the public. Just how important these profits were to particular holding-company systems will be apparent when the sources and amounts of holding-company incomes are analyzed. It is sufficient here to remark that the investing public often supplied all the funds with which the holding company acquired their operating properties and in addition paid a cash bonus to those who negotiated the deals. The processes of "write-ups" and stock-watering were tremendously profitable through the 1920's.

The elimination of competition. The elimination of competition has been less important in explaining the growth of holding-company groups than it was in the earlier decades when the local companies serving the same market were combining into larger operating units. In some instances, holding companies found survivals of such competition and they invariably sought to acquire and merge the competing property with their own.

The competition which the holding companies found most serious was that with publicly owned and operated plants. Even where there was no direct competition for the same business, the presence of a publicly owned plant in the same region furnished an example that was competitive in its effect. The private company felt compelled, in order to avoid undue criticism from its own patrons and to prevent a growth in the demand for public ownership, to meet, or nearly meet, the rates being charged by the public undertaking.¹⁵ It is not, therefore, surprising that the private utilities, and especially the holding companies, were active in attempting to induce communities with publicly owned plants to sell to private companies, and that in a number of instances such publicly owned plants were turned over to private interests.¹⁶

Economies in operation. The holding company was presented with many opportunities for effecting significant economies in the operations of its subsidiary utilities: the merger of small companies into regional companies, interconnections, and improved managerial methods, all were capable of reducing costs and enlarging net incomes. Many economies were realized, but unfortunately the promoters' publicity campaigns often grossly exaggerated the prospective savings and persuaded the unwary investor to buy relatively worthless securities or to pay unreasonable prices for quite ordinary stocks.

The merger of small operating units and the development of large regional companies were often necessary to achieve the economies potential in the technical developments of the industry. The development of larger operating companies produced economies not only because the use of large modern equipment was more efficient, but also because the serving of a large diversified market enabled the plant to obtain fuller utilization of its capacity and thereby to reduce the burden of overhead costs per unit of output.

Significant economies also resulted from the interconnection of different parts of the system. Interconnections may enable a utility to sell surplus output to other companies when their peak demands do not coincide. Duplicating

¹⁵ *Re Niagara, Lockport & Ontario Power Co.*, P.U.R. 1932A, 92 (N.Y., 1931); *Re Montreal Light, Heat & Power Co.*, 4 Ann. Rep. N.Y. Power Authority 90 (1934).

¹⁶ Chapter XXIV.

investments to supply capacity to meet peak demands and to maintain stand-by equipment may also be avoided.

Centralized direction by holding companies has also made possible important improvements in management. The isolated utility company was very often managed by local businessmen whose chief concern was with other enterprises and whose training for utility management was confined to what they had obtained on the job. The holding companies—by assembling specialists in management, in technical operations, in construction, in accounting, in purchasing, in market development, and in finance—were able to supply at a small cost to each subsidiary the highly specialized skills which only the larger companies could economically employ for themselves.

Financing. The historical sketch of the Electric Bond and Share Company emphasized the fact that the utility industry in its early years experienced difficulty in attracting sufficient capital to finance its development. In the period of rapid holding-company growth the attraction of capital was still a problem for many companies.

Holding companies approached the problem in various ways. The development of larger operating properties enabled the utility to sell its own bonds and preferred stocks directly to the investing public. The contacts of the holding company in the centers of finance enabled the securities of the operating companies to be marketed at a low cost. The holding company itself, by buying the common stock of subsidiaries and selling its own senior securities to the investing public, was in a position to direct equity capital into the industry. These opportunities to obtain capital more economically also offered a chance of larger profits to the holding company.

Obtaining and retaining service clients. Many holding companies obtained an important part of their revenues from the fees paid by operating utilities for services performed by the holding company or by its service subsidiaries. Once a service staff had been assembled, profits depended largely upon its full employment, and the surest way of developing a permanent market for the services was the acquisition of additional operating companies.

The acquisition and retention of control. The holding company is the obvious device both to facilitate the acquisition of control of operating properties and to assure the perpetuation of that control. Utility holding companies were able to buy the voting stocks of properties without the necessity of submitting to regulation by the commissions under which the utilities were operating; indeed, the acquisition of control could often be carried out secretly with all the advantages in cost that secrecy might afford. Furthermore, the holding company made possible the "capitalizing of the control"; that is, the holding company could sell its own bonds and preferred stocks on the security of the voting common stocks which it held in the subsidiary companies, thus recovering, in return for a limited annual interest and dividend payment, a substantial part of the acquisition costs.

Organizers' gains from holding companies. The preceding discussion of the motives for the formation of holding companies has placed too much emphasis on impersonal and objective factors. These considerations did, of course, play an important part in the building of holding-company systems, and they

served conspicuously to persuade investors to supply the funds with which promoters worked. However, the real and effective stimulus to the formation of holding companies arose from the gains that accrued to the organizers of these systems. Essentially the organizers were engaged in promoting their own financial interests and careers. This fact is most readily perceived in those instances where a single individual dominated the system.¹⁷

MECHANISMS OF CONTROL. The management of the holding-company systems have shown ingenuity in the devices by which they have perpetuated their control. Five mechanisms of control have been common, and some holding companies have exemplified all five.

Majority stock interest. It is the usual practice for a majority of the voting stock, sometimes for all except the directors' shares, of the operating utilities to be held by an intermediate, or sub-holding, company. American Power and Light Company, Electric Power and Light Corporation, and National Power and Light Company, subholding companies in the Electric Bond and Share system, owned all of the shares of most of their subsidiaries. The retention of a majority stock interest was aided by the trend toward the use of non-voting preferred stock by utilities, which enabled the holders of the common stock to retain their control without additional investment, even though the utility corporation raised new capital through the issue of preferred stocks.¹⁸

Equally effective in retaining control was the development of non-voting classes of common stocks. Where more than one class of common stock is outstanding, and one class alone carries voting privileges, the management can retain the voting stock and increase the issue of non-voting common as a means of raising equity money for the utility. The Associated Gas and Electric Company illustrated this practice.¹⁹

An even less expensive device for assuring a continuance of management's

¹⁷ In many instances a single individual did personify the holding company; e. g., S. Z. Mitchell for many years dominated Electric Bond and Share Co.; Harrison Williams practically controlled the North American Co. after 1920; Henry L. Doherty was synonymous with Cities Service Co.; prior to its collapse, an "empire" of holding companies and operating companies was ruled by Samuel Insull; H. C. Hopson and J. I. Mange exercised absolute control over Associated Gas and Electric Co.; and H. M. Byllesby for many years controlled Standard Gas and Electric Co. See also *Utility Corporations*, No. 72-A, p. 120.

¹⁸ Another significant reason for the use of non-voting preferred shares was to be found in the income-tax regulations which prevented the holding company, if there were voting preferred shares owned by others than the holding company, from filing a consolidated income tax return for itself and its subsidiaries.

¹⁹ "... At the end of 1929, Associated Gas & Electric Co. had outstanding six series of preferred stocks with an aggregate book valuation of approximately \$19,435,000; it had 2,000,000 shares of common stock with a book valuation of approximately \$21,686,000; class A stock consisting of 4,734,728 shares with a book valuation of \$156,966,000; and 500,000 shares of class B common stock with a book valuation of \$13,920,000. None of these stocks, except the class B common stock, carried any voting power unless dividends should not be paid for eight quarterly dividend periods.

"The preferred stocks and class A stock were the stocks that were distributed to the general public in customer-ownership campaigns, and all of the class B common stocks, which normally conferred the full voting power, were held by Associated Securities Corporation, which in turn was controlled by Associated Gas & Electric Properties, a Massachusetts trust, the entire ownership in which was represented by two certificates of beneficial interest (each representing a one-half interest) held respectively by H. C. Hopson and J. I. Mange. Apparently these certificates represented an investment of not more than \$292,060, and conferred control, through this arrangement, of assets the book value of which was more than \$907,000,000." (*Utility Corporations*, No. 72-A, p. 140.)

control is the creation of low-priced management shares. The use of the low-priced management share by the Standard Gas and Electric Company has already been described.²⁰ In the spring of 1929, to safeguard the management from being ousted by interests that were allegedly trying to acquire large blocks of Cities Service Company stock, there were created and issued 1,000,000 shares of 5 per cent non-cumulative stock to Henry L. Doherty and Company, at a price of \$1 per share.²¹

Finally, the process of pyramiding enables the top-holding company to own a majority of the voting stock of the underlying operating companies with an investment which is a small fraction of that common-stock interest.

Minority stock interest. It is not usually necessary to own a majority of the voting stock of a corporation to exercise effective control. The increase in the number of outstanding shares and the wide diffusion of ownership, where commonly no one outside of the management controls as much as one per cent of the voting stock, usually leads to a self-perpetuating management. The officers of the corporation control the proxy machinery, and as long as there is nothing notoriously and scandalously wrong with their conduct of the corporation, they can count on most of the stockholders signing and returning their proxies to the nominees of the management.

The management may safeguard itself against any adverse interest that might attempt to capture control through an authorized voting stock reserve, a large reserve of authorized, but unissued, voting stock. This arrangement requires that the pre-emptive rights of existing stockholders to subscribe for new issues of the same stock be abolished. H. M. Byllesby and Company caused the Standard Gas and Electric Company, in 1926, preliminary to an exchange of its stock for the securities of three other utilities, to increase the authorized issue of the \$1 management shares from 1,000,000 to 3,000,000 shares.²²

The classification of voting stock and of directors is a device which is also illustrated by the Byllesby interests. In 1930 there was a rearrangement of the control of Standard Gas and Electric Company and Standard Power and Light Corporation. A compromise between the Byllesby interests and an adverse group, after the Byllesby interests had successfully used the reserve of voting stock described above, resulted in a transfer of properties to Standard Gas and Electric Company and a transfer of that company's stock to the Standard Power and Light Corporation. The opposing group received common stock of the Standard Power and Light Corporation, and H. M. Byllesby and Company, the Class B stock. Of the 15 directors of the Standard Power and Light Corporation, 8 Class A directors were elected by the common stock and 7 Class B directors were elected by H. M. Byllesby and Company. But the 8 Class A directors of the Standard Power and Light Corporation elected 7 directors of Standard Gas and Electric Company, while the 7 Class B directors were to vote the majority of the stock of the Standard Gas and Electric

²⁰ *Supra*, p. 78.

²¹ In the case of Cities Service Co. there was additional assurance against the management's being disturbed in an arrangement whereby the terms of office of only one-third of the directors expired in any one year. Thus any person seeking to acquire control would have to have a majority of the stock voting at two annual meetings within a three-year period.

²² *Utility Corporations*, No. 72-A, p. 144.

Company and elect 8 of its directors. Thus H. M. Byllesby retained control of Standard Gas and Electric Company.²³

In the discussion of the holding-company pyramids, it was remarked that there were many instances of one holding company owning stock in other holding companies that were not its subsidiaries. Interlocking or circular voting power, as this arrangement is sometimes described, may be an effective means of increasing a small minority holding into an effective control of a company. Intercompany stockholdings were especially prominent in the In-sull system.

Voting trusts. The voting trust has been used by the Associated Gas and Electric system at the top of its pyramid. The Associated Gas and Electric Properties, a Massachusetts trust, was the instrument through which H. C. Hopson and J. I. Mange controlled directly a number of properties in New England, and it was the top-holding company which controlled the remainder of the system through Associated Securities Corporation (Delaware) and Associated Gas and Electric Company (New York).

Common officers and directors. In the Electric Bond and Share system the top-holding company owned only a minority of the voting stock of the intermediate holding companies. Control was assured through the interlocking officers that staffed the top-holding company, the intermediate holding companies, and the operating subsidiaries. Common officers naturally result from a holding company having control of a subsidiary; it is the most convenient means of bringing the policies and operations of the two companies into harmony. It may also relieve the holding company of the necessity of carrying a large investment in the voting stock of the subsidiary.

Where the interlocking officers and directors are not the result of an identity of interests between the two companies, the problem exists of protecting the investors of one company from unfair burdens which might result from dominant officers or directors having an interest in particular contracts or transactions adverse to the interests of the corporation. This problem has arisen in the utility field when operating utilities have been required to negotiate uneconomic contracts with the non-utility affiliates of the controlling holding company; here, the conflict of interest is between the outside investors in the operating company and in the intermediate holding companies, and the equity interests, usually the "control," of the top-holding company.

Intercompany contracts. In presenting the history of the Stone and Webster system, it was remarked that that organization did not at first acquire voting control of its client companies. Its control was effective through contracts for the management of the operating companies. As the experience of Stone and Webster illustrated, control based on intercompany contracts alone is sometimes precarious, since it is always possible for an adverse interest to acquire the voting control and terminate the contractual relations.

GROWTH OF CAPITAL ASSETS. The assets of the operating utility are principally the physical properties which furnish service to the consumers. The capital assets of the holding company, on the other hand, consist largely of the voting stocks of operating companies and of the affiliated companies that are

²³ *Utility Corporations*, No. 72-A, pp. 148-149.

created to perform certain services for the operating companies on a fee basis. The holding company also extends credits to its subsidiary companies, so that open-book accounts and notes constitute a part of its assets. While it sometimes holds the bonds and preferred stocks of operating subsidiaries, the holding company usually retains such securities only temporarily, as an aid to the financing of the operating company or as payment for services performed, to be sold when market conditions permit.

The growth of the capital assets of utility holding-company systems may be ascribed to four activities: the purchase of the securities or assets of operating properties; consolidations and mergers between subsidiary companies and the companies being acquired; new construction by units of the holding-company systems; and the "write-ups" that so commonly accompanied acquisitions and transfers of properties or that were based upon nothing more than an appraisal or revaluation of properties already held.

The rate of growth. The relative growth of the capital assets of holding companies and operating companies depends upon the period selected for measurement. The most rapid growth came during the 1920's when financing was easy and, at least for the electric companies, the demand for the operating company's service was expanding. As an indication of the rate of growth, the Federal Trade Commission tabulated figures for certain typical holding and operating companies. (Table 22.) The rate of growth is indicated by a comparison of the capital assets of each company for the earliest and latest dates for which the Commission had data. For the holding companies, there was an increase in capital assets from \$869,857,635 to \$3,099,563,301, or an increase of 256 per cent. The rate of growth for the operating companies was less spectacular, but even here the aggregate capital assets increased from \$964,290,750 to \$1,968,746,517, or 104 per cent.

The purchase of operating companies. The purchase of operating companies will be considered only with respect to the acquisition of properties from independent interests.²⁴ The holding companies have pursued a policy of continuous purchasing of the voting securities of operating companies. In some instances, the purchase has been paid for in cash, and in others through an exchange of the securities of the holding company, or a sub-holding company, for the securities acquired. Occasionally, part of the consideration has been the assumption of the liabilities of the acquired company. Where the consideration was paid in securities of the holding company or one of its subsidiaries, the securities given were commonly bonds and non-voting preferred stocks.²⁵

Various methods have been used to effect these purchases. In some instances, stocks have been acquired by purchases on the stock exchanges and in over-the-counter markets. On other occasions, the acquiring company has an-

²⁴ The transfer of properties between companies within the same system was almost universally accompanied by an inflation in the book value of the properties and in the volume of outstanding securities. It therefore seems more appropriate to consider such intercompany transactions when the phenomena of write-ups are analyzed.

²⁵ In this connection it appears to have been the policy of the Electric Bond and Share companies not to pay for acquisitions with their own stock unless the securities should be immediately sold by the vendor corporation or distributed among its stockholders. (*Control of Power Companies*, pp. 104-105.)

TABLE 22

INDICATED GROWTH OF CAPITAL ASSETS OF CERTAIN HOLDING AND OPERATING COMPANIES EXAMINED FOR AVAILABLE PERIODS *

<i>Holding Companies</i>				
	Earliest date	Amount	Latest date	Amount
American Gas & Electric Co.	Dec. 31, 1907	\$8,918,722	Dec. 31, 1928	\$28,227,436
Associated Gas & Electric Co. . . . .	.... do	1,200,000	Dec. 31, 1929	58,435,390
Cities Service Co.	Dec. 31, 1910	12,019,683	Dec. 31, 1930	277,156,899
Columbia Gas & Electric Corp.	Dec. 31, 1926	268,090,130	.... do	362,964,072
Electric Bond & Share Co.	Jan. 31, 1906	3,139,523	Dec. 31, 1927	107,450,611
Middle West Utilities Co.	Apr. 30, 1913	12,633,789	Sept. 30, 1930	249,774,782
New England Power Ass'n.	Dec. 31, 1926	92,387,539	Dec. 31, 1929	138,931,235
Niagara Hudson Power Corp.	Dec. 31, 1929	242,910,303	Dec. 31, 1932	170,127,270
North American Co.	May 31, 1901	9,243,279	Dec. 31, 1929	132,700,582
No. Am. Light & Power Co.	Dec. 31, 1915	145,040	.... do	62,022,234
Southeastern Power & L. Co.	Dec. 31, 1924	42,668,832	.... do	212,055,055
Standard Gas & Electric Co.	Dec. 31, 1910	11,801,460	.... do	161,283,098
Stone & Webster, Inc.	Dec. 31, 1929	49,887,174	Dec. 31, 1932	66,760,403
Tri-Utilities Corporation . . . . .	.... do	38,523,405	Dec. 31, 1930	42,598,245
United Gas Improvement Co.	Dec. 31, 1917	75,695,180	.... do	359,482,248
Utilities Power & Light Corp.	Dec. 31, 1915	593,576	.... do	89,677,741
Total		869,857,635		3,099,563,301
<i>Operating Companies</i>				
Alabama Power Co.	Dec. 31, 1927	\$143,163,108	Dec. 31, 1929	\$166,461,574
Appalachian Electric Power Co.	Dec. 31, 1926	158,003,720	Dec. 31, 1928	170,330,410
Arkansas Power & Light Co. . . . .	.... do	15,789,312	Dec. 31, 1930	59,974,827
Carolina Power & Light Co. . . . .	.... do	64,458,267	Dec. 31, 1929	93,973,327
Central Illinois Public Service Co.	Dec. 31, 1923	39,303,857	Dec. 31, 1930	86,654,581
Cities Service Gas Co.	Dec. 31, 1926	52,559,879	Dec. 31, 1931	83,824,439
Connecticut Light & Power Co.	Dec. 31, 1921	17,884,184	.... do	85,681,536
Florida Power Corporation	Dec. 31, 1920	1,087,861	Dec. 31, 1930	21,432,426
Indiana & Michigan Electric Co.	Dec. 31, 1925	32,366,434	Dec. 31, 1928	39,101,540
Louisville Gas & Electric Co. (Kentucky)	Dec. 31, 1916	20,734,945	.... do	41,420,305
Manufacturers Light & Heat Co.	June 30, 1903	16,145,000	Dec. 31, 1930	56,812,412
Metropolitan Edison Co.	Dec. 31, 1918	9,209,596	Dec. 31, 1929	62,177,759
Minnesota Power & Light Co.	Dec. 31, 1923	42,226,695	Dec. 31, 1928	71,469,938
N.Y. Power & Light Corp.	Dec. 31, 1927	89,215,521	Dec. 31, 1931	125,881,625
N.Y. State Electric & Gas Corp.	Dec. 31, 1915	769,841	Dec. 31, 1929	58,985,646
Niagara Falls Power Co.	Dec. 31, 1918	35,721,705	Dec. 31, 1931	63,863,294
Northern States Power Co. (Minnesota)	Dec. 31, 1910	12,828,429	Dec. 31, 1929	113,027,449
Oklahoma Gas & Electric Co.	Sept. 30, 1905	1,994,195	Dec. 31, 1928	63,952,501
Public Service Co. of Colorado	Dec. 31, 1924	62,998,086	Dec. 31, 1930	77,719,117
Syracuse Lighting Co., Inc. . . . .	.... do	14,095,709	Dec. 31, 1931	34,230,336
Union Electric Light & Power Co. (Missouri)	Dec. 31, 1903	13,804,137	Dec. 31, 1930	89,556,395
United Fuel Gas Co.	Dec. 31, 1916	18,800,922	.... do	98,367,021
Utah Power & Light Co.	Dec. 31, 1912	22,100,000	.... do	81,733,957
Virginia Electric & Power Co.	Dec. 31, 1925	50,471,813	Dec. 31, 1933	78,839,983
West Texas Utilities Co.	Dec. 31, 1927	28,557,534	Dec. 31, 1930	43,274,095
Total		964,290,750		1,968,746,517

* Source: *Utility Corporations*, No. 72-A, p. 193.

nounced its willingness to buy all, or a specified amount, of the stock at a designated price. Where the control of the corporation was already in a small group or another corporation, there have been direct negotiations. Some purchases have been carried out through an intermediary, and sometimes these intermediaries have been individuals affiliated with the acquiring corporation.

Where the financial standing of the holding company permitted the ready sale of its own stock, there was a preference for cash purchases. At least, there was a preference for cash purchase unless the vendor was affiliated with the acquiring corporation and there was contemplated a write-up in the price of the property, for write-ups could be more easily disguised when the consideration was in the form of securities. Also, the payment of the consideration in securities might appear advisable when the purchase price was unreasonably high in relation to the asset value or earnings of the acquired property. But under normal circumstances, the payment in cash was preferred for at least two reasons: the offer of cash was conducive to the fixing of a lower purchase price, and the sale of the holding company's shares directly to the investing public prevented a concentration of the company's securities with one owner.

The purchase of control sometimes involved the payment of an excessive consideration, even when the negotiations were between parties bargaining at arm's length. The payment of excessive prices was detrimental to the security holders of the holding company and to the consumers of the operating companies. The existing security holders found their investment diluted whenever the assets acquired were of less value than the consideration paid; future security holders who relied upon the book valuations in appraising the worth of the company's securities were thereafter deceived. A holding company which had assumed with respect to investors, whether common stockholders or holders of senior securities, obligations which were excessive as measured by the earning power of its properties was forced to resist all regulatory efforts that might effect a reduction in the earnings of the underlying properties.

Consolidations and mergers. If the holding company possessed operating subsidiaries in a territory where other properties were being acquired it was often possible to effect a consolidation or merger of the existing subsidiary and the property or properties to be acquired. The consolidation could then be financed by the credit of the operating company without burden to the holding company, or if the holding company did advance capital, it was only temporarily, or if permanently, only for the acquisition of such common stock as the operating company might issue in effecting the consolidation.

Growth by consolidation possessed other than financial advantages for the holding company. The unification of operating companies into larger units meant a simplification in the capital and corporate structures of its subsidiaries and facilitated financing. The merger generally produced economies in centralized management, in the reduction in capital investment (particularly for reserved capacity), and in a better utilization of both productive and distributive capacity.

Reorganizations. It is not to be expected that reorganizations would be accompanied by any significant growth in the capital assets of a corporation, but in the case of utility holding companies and their subsidiaries there were

such instances. The reasons for corporate reorganizations were various: the inability to meet the interest or principal on the corporate debt, a desire to avoid the restrictions of an "after-acquired-property clause" in certain mortgages, a need to revise the company's capital structure to facilitate new financing, or an opportunity to obtain new franchise or charter privileges. Only in the involuntary reorganizations was there ordinarily a writing down of capital assets, and even in these reorganizations there were instances where write-ups served to obscure the fact that the corporation's losses had impaired the investment of security holders.

Other classes of reorganizations, those not originating in receivership and financial difficulties, were not uncommon and were repeatedly accompanied by new capital structures involving write-ups in assets and increases in capitalization. The organization of the Electric Power and Light Corporation illustrates the extremes to which write-ups were sometimes carried. The new company was practically a reorganization of the Utah Securities Corporation. The assets which the new company received from the Utah Securities Corporation and which appeared on the books of the latter company at \$3,854,263.98, were recorded by the Electric Power and Light Corporation at \$33,373,343.98, a write-up of \$29,519,080 or more than 860 per cent. Further write-ups of \$12,102,867.02 were recorded on other securities acquired from the Electric Bond and Share Company.²⁶

New construction. The normal method of growth for the operating company is either through merger with already existing operating properties or through the construction of new properties, either for the more intensive development of its existing territory or for an extension of service into new areas. The years between the World War and 1929 witnessed a rapid growth of the public utility industries, especially the electric and natural-gas utilities. In the process of building holding-company systems, merging operating companies, and making interconnections, large new investments were made in the construction of central generating stations, in the erection of transmission lines, and in the rebuilding of antiquated properties. The growth of capital assets through new construction contributed significantly to the enlarged and improved service which utilities afforded; but the methods utilized by the holding companies in the performance of their construction work and its financing resulted in increasing the normal costs of construction.

The construction work for the operating companies could be performed either by independent construction and engineering companies, by the holding company or an affiliate, or by the operating company itself. It is customary for operating companies of normal size to do such construction work as is incidental to maintenance and replacements and to normal expansion. Where the construction work is performed by an outside construction company, the work is usually done for a single-sum payment, the overhead costs and the profits of the construction company being naturally included in the cost to the utility and, hence, in its capital accounts. When the work is performed by an affiliated organization, whether for a specified sum or on a cost-plus basis, the consideration is not determined by arm's-length bargaining, and consequently the

²⁶ *Utility Corporations*, No. 72-A, p. 323.

charges made for the affiliate's overhead costs and profits may include questionable items of intercompany profits that have no proper place in the capital of the utility company. The construction overhead most frequently abused was interest during construction; funds were reportedly loaned by holding companies in excess of the actual need, for excessively long construction periods, and for rates of interest in excess of the reasonable cost of money to the operating company. Management, engineering, and supervision fees not infrequently represented improper profits to the controlling interests.²⁷

Another source of improper inflation of the capital assets of the operating companies arose in financing construction work. The securities of the operating company were frequently sold to the holding company at a price which represented a substantial discount. Whether or not the discount was excessive is immaterial, for discount on bonds and stocks has no place among costs of capital assets. Yet where securities are the consideration paid for capital assets, or where the "discount" purports to be a part of the costs of financing, there is more than a possibility that the acquired assets will be recorded on the books in excess of their actual legitimate cost.²⁸

Write-ups and inflation of capital assets. A "write-up" is an increase in the book value of an asset in excess of its actual cost. An inflation of the book value of the capital assets of a company may create the appearance of a financially strong corporation, may enable the company to borrow funds more readily, may serve as the base for additional security issues and stock-watering, and may conceal the real rate of earnings on the actual investment in the property.

The amount of the write-ups will always be a matter of dispute, depending upon the interpretations placed upon particular transactions. On the basis of what appears to be a reasonable estimate by the Federal Trade Commission, the write-ups exceeded \$1.4 billions. Of this amount, the operating companies accounted for 58.0 per cent, the sub-holding companies for 23.7 per cent, and the top-holding companies for 18.3 per cent. The sums, classified by holding-company systems, are presented in Table 23. A more significant indication of the magnitude of the write-ups is the percentage which the write-up constitutes of the total assets of the companies. The capital assets of the eighteen top-holding companies included write-ups equivalent to 9.6 per cent of their assets; the forty-two sub-holding companies, 16.5 per cent; and the operating companies, 22.1 per cent.²⁹ These figures greatly understate the significance of the write-ups. The relative magnitude of the write-ups is larger if the amount of the write-up is related to the value of the assets just prior to the write-up. Furthermore, since some companies had no write-ups, the percentages are materially higher if they are related only to those companies whose assets were written-up.

Write-ups have been associated with every conceivable type of transaction, and in some instances write-ups were their own excuse, being founded on nothing more than an appraisal and revaluation of properties already held. In

²⁷ *Utility Corporations*, No. 72-A, pp. 206-216.

²⁸ *Utility Corporations*, No. 72-A, pp. 199-206.

²⁹ *Utility Corporations*, No. 72-A, p. 299. The write-ups by individual companies are presented in *Utility Corporations*, No. 76, pp. 420-423; Exhibit 6218

TABLE 23

SUMMARY OF WRITE-UPS, IMPROPERLY CAPITALIZED INTANGIBLES, AND INFLATION INCLUDED IN THE CAPITAL ASSETS OF THE TOP HOLDING, SUBHOLDING, AND OPERATING COMPANIES AT THE FINAL DATES OF EXAMINATION, AND GROSS TOTALS OF SUCH WRITE-UPS *

Group	Top-holding companies	Sub-holding companies	Operating companies	Total
Electric Bond & Share Co.	\$8,484,274	.....	.....	\$8,484,274
American Power & Light Co. and subsidiaries .....	.....	\$5,555,090	\$93,587,857	99,142,947
Electric Power & Light Corp. and subsidiaries .....	.....	42,341,947	62,531,518	104,873,465
National Power & Light Co. and subsidiaries .....	.....	3,723,958	47,526,594	51,250,552
Total Electric Bond & Share Co. group	8,484,274	51,620,995	203,645,969	263,751,238
American Gas & Electric Co. and subsidiaries ¹	2,500,000	.....	85,992,660	88,492,660
Associated Gas & Electric Co. and subsidiaries	33,362,152	99,269,789	² 119,830,177	² 252,462,118
Central Public Service Co. and subsidiaries .....	.....	15,838,899	.....	15,838,899
Cities Service Co. and subsidiaries	35,557,283	92,495,983	134,057,442	262,110,708
Columbia Gas & Electric Corp. and subsidiaries	47,033,495	2,978,651	52,487,250	102,499,396
W. B. Foshay Co. and subsidiaries	3,020,281	.....	4,985,312	8,005,593
Middle West Utilities Co. and subsidiaries	34,938,204	33,557,720	42,576,808	111,072,732
New England Power Association and subsidiaries	19,492,089	.....	20,469,857	39,961,946
Niagara Hudson Power Corp. and subsidiaries	1,240,538	33,410,002	47,768,670	82,419,210
The North American Co. and subsidiaries	4,223,390	1,862,349	21,909,500	27,995,239
North American Light & Power Co.	23,180,934	.....	.....	23,180,934
Southeastern Power & Light Co. and subsidiaries	42,632,184	.....	79,971,253	122,603,437
Standard Gas & Electric Co. and subsidiaries	5,400,000	3,132,065	36,854,529	45,386,594
Stone & Webster, Inc. and subsidiaries .....	.....	5,263,498	3,391,695	8,655,193
Tri-Utilities Corp.	7,453,049	.....	.....	7,453,049
United Gas Improvement Co. and subsidiaries .....	.....	13,940,084	10,290,501	24,230,585
Utilities Power & Light Corp.	4,902,292	.....	.....	4,902,292
Total	273,420,165	353,370,035	864,231,623	1,491,021,823
Per cent to total	18.3	23.7	58.0	100

¹ Affiliated with Electric Bond & Share Co.

² Includes write-ups of \$39,980,716 recorded on the books of companies of the New England Gas & Electric Association for consolidated balance sheet purposes only.

Note: Including write-ups in 1929 of \$399,201,827 in the investments of Electric Bond & Share Co. and \$140,109,788 in the investments of Niagara Hudson Power Corp., the total write-ups for all companies examined amount to \$2,030,335,438. However, Electric Bond & Share Co. subsequently wrote down its investments \$441,387,724 and Niagara Hudson Power Corp. subsequently wrote down its investments \$138,869,250.

* Source: *Utility Corporations*, No. 72-A, p. 302.

the purchase of operating properties, the payment of extravagant prices to non-affiliated interests and the temptation to show profits on intercompany transactions within the system were the occasion for these inflations. Consolidations and mergers, whether between non-affiliated or affiliated companies, commonly resulted in stock-watering and a corresponding write-up in the ledger value of the assets. Voluntary reorganizations and reconstitutions of capital structures seemed a natural occasion for increasing asset valuations, and the mere transfer of contracts from one company to another within the same system allegedly made those contracts more valuable. Even new construction work, when carried out by an affiliated organization, resulted in the inclusion of questionable items of overhead costs in the capital accounts of the utility for which the work was done. Illustrations of these transactions will afford a concrete basis for an appraisal of the significance of write-ups.

In the purchase of operating properties in transactions characterized by arm's-length bargaining, write-ups resulted from two situations. The payment of a price in excess of the book value of the securities acquired by the holding company led to a write-up in the assets of the acquired company, for the holding company was naturally reluctant to carry its assets, usually stock in the subsidiary, at a book value in excess of its apparent asset value; and the more extravagant the purchase price, the more irresistible was the pressure to conceal that fact through a write-up.³⁰ Without even the excuse of excessive purchase prices, newly acquired assets were sometimes evaluated in excess of their costs. Thus, in the organization of the Mohawk Hudson Power Corporation, the costs of the properties acquired was recorded at \$37,640,822.81 and afterward written-up to \$51,985,820.00, an increase of \$14,344,997.19.³¹

Even when the purchase of control was from an unaffiliated interest, there was the possibility that promoters or other insiders would seek to profit at the expense of the company for which they were acting. Thus during the years 1915 to 1917, the stockholders of the North American Light and Power Company purchased the securities or physical assets of certain gas and electric companies located in Ohio, Oklahoma, Missouri, and Idaho, and profited to the extent of \$300,000 in the par value of the common stock of the Northern American Light and Power, although the funds with which the transactions were financed were raised in advance through the sale of that company's preferred stocks and bonds. And again in 1919, the acquisition of the Southern Illinois Light and Power Company for the North American Light and Power Company by the stockholders of the latter corporation increased the costs of acquisition from \$700,000 to \$1,400,000.³²

The transfer of properties from one corporation to another within the same holding-company system permitted intercompany profits of any magnitude to be shown, and these fictitious profits were ordinarily reflected in a write-up of the accounts of the corporation whose securities were thus transferred. The Insull system was particularly addicted to recording "profits" on the transfer of properties from one sub-holding company to another. The Federal Trade

³⁰ Reference has already been made to the Associated Gas and Electric Company's acquisition of the Barstow interests as an example of an excessive purchase price.

³¹ *Utility Corporations*, No. 72-A, pp. 226-229.

³² *Utility Corporations*, No. 72-A, pp. 222-223.

Commission's investigation of the Central and South West Utilities Company (Insull) revealed that on December 31, 1930, the companies in this group had recorded an inflation of \$32,307,933, of which \$23,016,702 arose through the intercompany profits taken by various Insull companies in the transfer of properties, and the remainder through various mergers, consolidations, and reorganizations.³³ Another example of intercompany profits arising from the transfer of properties within the same system is supplied by the organization of the Cities Service Power and Light Company in November, 1924, to take over a substantial proportion of the securities which the Cities Service Company held in its various subsidiaries. For securities which represented a total investment by Cities Service Company, including open-book credits and accrued earnings, of \$40,057,852, the Cities Service Power and Light Company issued \$99,999,000 of bonds, preferred stocks, and common stock, a "profit" of \$59,942,148 to the Cities Service Company; and thereupon the Cities Service Power and Light Company recorded these same securities on its books at \$106,104,403, or at 165 per cent more than the amount at which they had been recorded on the books of Cities Service Company.³⁴

The consolidation or merger of utility companies, even when those companies were unaffiliated, was frequently a basis for an inflation of capitalization. Thus the organization of the Columbia Gas and Electric Corporation in October, 1926, to consolidate the old Columbia Gas and Electric Company and the Ohio Fuel Corporation, resulted in a credit to surplus by the new corporation of \$69,979,339, the difference between the ledger value of all the net assets acquired and the value assigned to the stocks issued therefor.³⁵

The activities of two Electric Bond and Share sub-holding companies, the American Power and Light Company and the Electric Power and Light Company, illustrate the write-ups that accompany the consolidation of affiliated units: the former in the organization of the Minnesota Power and Light Company and the Florida Power and Light Company, and the latter in the organization of the Arkansas Power and Light Company, the Louisiana Power and Light Company, and the Mississippi Power and Light Company. The Minnesota Power and Light Company recorded on its books at \$38,711,179 properties which had costs or ledger values amounting to approximately \$17,076,250, a write-up of 126 per cent. The costs and ledger values of the properties that went into the formation of the Florida Power and Light Company amounted to \$28,213,209, but these properties were entered on the books of the new company at \$58,445,217, a write-up of 103 per cent. A comparison of the fixed capital of the new companies at the dates of their organization with the fixed capital of the predecessors revealed write-ups of approximately 23.0 per cent for the Arkansas Power and Light Company, 109.64 per cent for the Louisiana Power and Light Company, and 110.15 per cent for the Mississippi Power and Light Company.³⁶

³³ *Utility Corporations*, No. 72-A, pp. 239-240.

³⁴ *Utility Corporations*, No. 72-A, pp. 240-241.

³⁵ *Utility Corporations*, No. 72-A, p. 255. The Federal Trade Commission reported write-ups of \$104,833,905 in the assets of the constituent companies and their subsidiaries.

³⁶ *Utility Corporations*, No. 72-A, pp. 259-260.

A final example of the inflation in asset valuations incident to consolidation and merger is provided by the history of the common stock of the Georgia Railway and Power Company

Involuntary reorganizations often resulted in a write-down in the book value of the assets. The depression of the 1930's revealed a lack of economic foundation for many of the values at which holding companies were carrying their subsidiaries' securities, and in a number of instances these valuations were reduced even at the expense of a reorganization and recapitalization of the holding company. However, there were several instances in the period prior to 1929 when voluntary reorganizations were accompanied by an inflation of capitalization and write-ups of assets. The write-up frequently took the form of a capitalization of bond and stock discounts. Commonly the securities of the subsidiary were sold to the holding company and by the holding company to the investing public; and ordinarily the securities sold for less than their par value, indicating that the valuations placed on the acquired properties, based on the stated values of the securities paid therefor, were in excess of the actual cash value of the consideration paid. In some instances, reorganizations were accompanied by extreme examples of write-ups, as in the case of reorganization of the Omaha Electric Light and Power Company into the Nebraska Power Company in 1917. The total capitalization of the Omaha Electric Light and Power Company consisted of \$3,789,600, yet for the net assets of this company the Electric Bond and Share Company caused Nebraska Power Company to issue securities with a face value of \$11,000,000.³⁷

Some reorganizations were nothing more than the creation of new subsidiaries, without the transfer of other than intangible assets. Thus the Associated Gas and Electric Company caused the incorporation of certain non-utility affiliates to perform various services for its subsidiary utility companies. The Associated Gas and Electric transferred to these companies various contracts for the performance of different services, the contracts having been obtained without cost to it; yet on the basis of arbitrary values assigned to

as it was transferred successively from the Georgia Securities Company to the Southeastern Power and Light Company, to the Southeastern Securities Company, to the old Georgia Power Company, and to the new Georgia Power Company. The new Georgia Power Company was organized in 1927 and is now a subsidiary of the Commonwealth and Southern Corporation.

The story is continued from the Federal Trade Commission report:

"It appears that control of Georgia Railway & Power Co. was acquired by Southeastern Power & Light Co. through an exchange of common stocks. At the time that the stock of Georgia Railway & Power Co. was acquired it had a book value of approximately \$115 per share (\$100 par value and \$15 surplus), or a total common-stock equity on the books of Georgia Railway & Power Co. of \$28,713,660. No-par value common stock of the Southeastern Power & Light Co. was issued in exchange for the Georgia Railway & Power Co. common stock. The stock of the latter company was valued on the books of the several Southeastern companies in the course of its transfer to the new Georgia Power Co. at \$230 per share, or double the value of the stock on the books of the Georgia Railway & Power Co.

"In limited transactions the market value, or the exchange value, of the Georgia Railway & Power Co.'s common stock was only \$114.61 per share and substantiated in a way the book value of \$115 per share. The earnings per share on this stock for the year 1923 were \$4.36; 1924, \$4.72; 1925, \$1.58; and 1926, \$2.04, which would hardly tend to prove that the stock was worth \$230 per share. In the cancellation of the stock of Georgia Railway & Power Co. in the consolidation of its assets with those of the other Georgia companies to form the new Georgia Power Co., the physical properties were entered on the books of the latter company at an amount which reflected the value of \$230 per share which had been assigned to the stock of Georgia Railway & Power Co., thus resulting in a write-up of \$28,713,660 in the consolidation as a result of this transaction. The capitalization of other items incidental to this consolidation increased the total write-up to \$33,453,500." (*Utility Corporations*, No. 72-A, p. 263.)

³⁷ *Utility Corporations*, No. 72-A, p. 264.

these contracts, there were inflations in the capital accounts of these companies of \$28,247,400.³⁸

The story of one of these write-ups will suffice to indicate the character of all. For a number of years the J. G. White Management Corporation had had a contract with the Associated Gas and Electric Company for the management of its subsidiary properties. In July, 1927, the Associated Gas and Electric Company assigned its managerial contracts with its subsidiaries to a newly organized subsidiary, the Utility Management Corporation, for \$5,200,000 par value of the latter's common and preferred stocks. The Utility Management Corporation thereupon engaged J. G. White Management Corporation to continue as operating manager of all of the Associated Gas and Electric properties for an annual fee of \$200,000; the contracts between the Utility Management Corporation and the operating utilities provided for fees equal to 2½ per cent of the gross revenues of each company. When the Associated Gas and Electric Company acquired control of the J. G. White Management Corporation in 1928, the Utility Management Corporation assigned its management contracts to the J. G. White company for a consideration of \$8,000,000 in twenty-year 8 per cent income notes.³⁹

If there are degrees of perniciousness in the write-ups of utility asset accounts, the most pernicious are those resulting from a mere appraisal or revaluation of the properties of the companies. In some instances these appraisals were made by the company's own engineering staff, in others by an affiliated engineering company, and in yet others by independent appraisers. Some of the revaluations were made frankly on a reproduction-cost basis; others which had the approval of state regulatory authorities were based upon a consideration of original or historical cost as well as reproduction cost. The occasions for these revaluations varied: to present a more appealing prospect to the prospective investor; to reduce the apparent rate of earnings; to justify the securities which the holding company had issued in payment for properties; to create a depreciation reserve and provide for retirements; or to enable the holding company to record a profit. The holding companies adjusted their books differently according to their objectives: some write-ups were not reflected on the books of the holding company; others were recorded by an increase in the surplus account (and in some instances no distinctions were made between revaluation surpluses and earned surpluses, and dividends were paid out of both); in one or two instances, the holding company balanced the write-up by a credit to depreciation reserves.

³⁸ The values assigned to these different contracts and their nature were reported as follows:

Management service contracts between the J. G. White Management Corporation and affiliated companies	\$8,000,000
Construction service contracts between W. S. Barstow & Co. and certain affiliated companies	5,100,000
Construction service contracts between W. S. Barstow & Co. and certain other affiliated companies	5,547,400
Purchasing service contracts between Utilities Purchasing & Supply Corporation and affiliated companies	3,700,000
Appliance sales servicing contracts between Associated Utilities Merchandising Co. and affiliated companies	<u>5,900,000</u>
Total	28,247,400

(*Utility Corporations*, No. 72-A, p. 242.)

³⁹ *Utility Corporations*, No. 72-A, pp. 242-244.

The write-ups based upon revaluations and reappraisals show little variation from the patterns that have already been described. The allowances for intangibles frequently afforded the excuse. The Northern States Power Company (Standard Gas and Electric Company), on December 31, 1924, recorded a write-up of \$18,378,207; in a book total of \$65,476,806 for fixed capital, going value and waterpower rights were appraised at more than \$19,000,000.⁴⁰ The Metropolitan Edison Company indulged in three write-ups in five years, two under the Barstow interests and one under the Associated Gas and Electric Company. In 1925 there was a write-up of \$3,543,049 on the basis of an appraisal by Day and Zimmerman, Inc.; in 1927, certain newly acquired properties were written-up \$942,329; and in 1930, on an appraisal by Edward J. Cheney, the Associated Gas and Electric Company caused another write-up of \$18,868,658 on the occasion of its acquisition of the Metropolitan Edison. These three write-ups aggregated \$23,354,036, the ledger value of the fixed capital on December 31, 1931, being \$85,766,967.⁴¹

The significance of the write-ups which have been described is not hard to discover. The immediate effect of the write-ups by the operating companies was to picture the rate of earnings on the operating properties at less than the true rate. Write-ups were intended to, and in fact did, deceive investors as to the value of the assets of holding and operating companies. Where the holding company reflected the write-ups by credits to surplus, without any statement as to the nature of that surplus, there was created the appearance of a larger rate of earnings than the income from the operating properties justified, and when dividends were paid from such valuation surpluses, stockholders were further harmed. There is also no doubt that the write-ups worked serious injury to investors by enabling managements to market dubious securities at unwarranted prices.

The role of intermediaries. Throughout the discussion of the growth of the capital assets of the holding-company systems there have been frequent references to the use of intermediaries. A variety of purposes may be served by the employment of an intermediary: it may enable the avoidance of, or facilitate compliance with, particular legal requirements; it may avoid the realization of a profit on which an income tax would have to be paid; it may lend the appearance of arm's-length bargaining to a transaction which lacks that characteristic; it may serve to consolidate several transactions into one, simplifying the accounting record and enabling a number of transactions to be validated by a single vote of the directors and stockholders; and, perhaps the most cogent reason of all, the intermediary may facilitate and conceal the taking of profits by those identified with the management or control of the corporation. As the Federal Trade Commission found, the use of an intermediary renders it difficult to obtain a full picture of equivocal dealings, especially when the companies under investigation refuse to make detailed records available.⁴²

A single example may be cited to illustrate profit-taking by the intermediary

⁴⁰ *Utility Corporations*, No. 72-A, pp. 282-283.

⁴¹ *Utility Corporations*, No. 72-A, pp. 285-286.

⁴² *Utility Corporations*, No. 72-A, pp. 273-275.

device. It involved the acquisition of the Laclede Gas Light Company of St. Louis by the Utilities Power and Light Corporation. The promoters realized total proceeds of \$20,030,500 on an initial investment of \$5,650,000.⁴³

CAPITALIZATION AND SECURITY ISSUES. The capitalization of the utility holding companies is a matter of public concern. The vast volume of securities issued by the holding companies and their affiliates had, and still has, an important bearing on the welfare of investors and the functioning of capital markets. Also, the holding companies' operations on the capital markets has affected the cost and availability of capital to the entire utility industry.

The growth of utility capitalizations. The discussion of the growth of the capital assets of the holding and operating companies examined by the Federal Trade Commission indicated that the industry generally had undergone a period of rapid expansion. Similar figures have been prepared with respect to the growth of the capital liabilities of holding and operating companies. It is significant that the capital liabilities of the holding companies increased even more rapidly than their capital assets. The capital liabilities of the holding companies increased from \$862,973,811, as of the earliest available date, to \$3,363,675,374 as of the close of the Commission's examinations, an increase of approximately 290 per cent. The growth of capital assets in the corresponding period was 256 per cent. A different situation prevailed for the operating companies. Their capital liabilities increased from \$1,035,972,069 to \$1,876,389,005, or approximately 81 per cent. It is to be noted that the rate of growth of their capital liabilities was less than the rate of growth of capital assets which approximated 104 per cent.⁴⁴ Table 24 summarizes the growth of capital liabilities for representative holding and operating companies.

Capital structures. It is a characteristic of utility holding companies as well as of the operating companies that their capital funds have been raised largely through the issuance and sale of securities. Table 25 presents an analysis of the combined capital and other liabilities and surplus of the top-holding companies, sub-holding companies and operating utilities examined by the Federal Trade Commission. Since these are combined figures, the percentages are in the nature of averages and do not reflect the peculiarities in capital structure of particular companies. From this tabulation it would appear that the top-holding companies raised 81.8 per cent of their capital through the sale of securities, the sub-holding companies 77.0 per cent, and the operating utilities 75.8 per cent. In actuality, these percentages probably understate the extent to which the investing public supplied the funds for the holding companies, for the book figures for surplus arose substantially from write-ups and revaluations of capital assets as well as from the reinvestment of earnings.

When the relative proportions of securities issued by the holding companies and operating companies are analyzed, it is found that the holding companies depended more largely upon the issuance of common and preferred stocks, these issues having accounted for approximately three-quarters of their capital issues. In contrast, the operating companies raised nearly half of their capital through the issuance of bonds, generally mortgage bonds. The reasons for these differences are to be found partly in the nature of the assets of the

⁴³ *Utility Corporations*, No. 72-A, p. 224.

⁴⁴ *Supra*, p. 91.

TABLE 24 *

INDICATED GROWTH OF CAPITAL LIABILITIES OF CERTAIN HOLDING
AND OPERATING COMPANIES

<i>Holding Companies</i>				
	<i>Earliest date</i>	<i>Amount</i>	<i>Latest date</i>	<i>Amount</i>
American Gas & Electric Co.	Dec. 31, 1907	\$10,421,503	Dec. 31, 1928	\$107,119,779
Associated Gas & Electric Co.	.... do	1,000,000	Dec. 31, 1929	543,072,648
Cities Service Co.	Dec. 31, 1910	12,649,070	Dec. 31, 1930	560,877,065
Columbia Gas & Elec. Corp.	Dec. 31, 1926	241,288,527	.... do	350,105,217
Electric Bond & Share Co.	Jan. 31, 1907	4,000,000	Dec. 31, 1927	100,000,000
Middle West Utilities Co.	Apr. 30, 1913	17,426,300	Sept. 30, 1930	275,290,979
New England Power Ass'n.	Dec. 31, 1926	64,068,333	Dec. 31, 1929	157,849,141
Niagara Hudson Power Corp.	Dec. 31, 1929	293,253,312	Dec. 31, 1932	182,845,724
North American Co., The	May 31, 1901	11,936,700	Dec. 31, 1929	117,456,367
No. Am. Light & Power Co.	Dec. 31, 1915	114,000	.... do	76,581,849
Southeastern Power & L. Co.	Dec. 31, 1924	39,606,400	.... do	238,119,078
Standard Gas & Electric Co.	Dec. 31, 1910	12,369,950	.... do	166,994,658
Stone & Webster, Inc.	Dec. 31, 1929	56,817,606	Dec. 31, 1932	50,000,000
Tri-Utilities Corporation	.... do	36,368,610	Dec. 31, 1930	38,775,301
United Gas Improvement Co.	Dec. 31, 1917	61,029,800	.... do	255,550,784
Utilities Power & Light Corp.	Dec. 31, 1915	623,700	.... do	143,036,784
Total .....	.....	862,973,811	.....	3,363,675,374
<i>Operating Companies</i>				
Alabama Power Co.	Dec. 31, 1927	\$139,709,376	Dec. 31, 1929	\$156,749,845
Appalachian Elec. Power Co.	Dec. 31, 1926	146,019,804	Dec. 31, 1928	156,511,804
Arkansas Power & Light Co.	.... do	31,500,000	Dec. 31, 1930	57,064,727
Carolina Power & Light Co.	.... do	62,905,038	Dec. 31, 1929	89,960,042
Central Ill. Public Service Co.	Dec. 31, 1923	44,373,479	Dec. 31, 1930	101,344,237
Cities Service Gas Co.	Dec. 31, 1926	50,000,000	Dec. 31, 1931	63,701,500
Conn. Light & Power Co.	Dec. 31, 1921	19,986,000	.... do	78,090,500
Florida Power Corp.	Dec. 31, 1920	1,000,000	Dec. 31, 1930	19,466,443
Indiana & Michigan Elec. Co.	Dec. 31, 1925	26,656,775	Dec. 31, 1928	30,761,275
Louisville Gas & Electric Co. (Kentucky)	Dec. 31, 1916	23,963,300	.... do	63,817,700
Manufacturers Light & Heat Co.	June 30, 1903	30,566,350	Dec. 31, 1930	22,530,400
Metropolitan Edison Co.	Dec. 31, 1918	11,015,000	Dec. 31, 1929	56,928,433
Minnesota Power & Light Co.	Dec. 31, 1923	40,854,401	Dec. 31, 1928	69,751,400
N. Y. Power & Light Corp.	Dec. 31, 1927	105,674,506	Dec. 31, 1931	103,647,667
N. Y. State Electric & Gas Corp.	Dec. 31, 1915	780,807	Dec. 31, 1929	29,786,801
Niagara Falls Power Co.	Dec. 31, 1918	55,390,967	Dec. 31, 1931	66,042,815
Northern States Power Co. (Minnesota)	Dec. 31, 1910	12,767,900	Dec. 31, 1929	190,652,187
Oklahoma Gas & Electric Co.	Sept. 30, 1905	1,895,000	Dec. 31, 1928	68,255,600
Public Service Co. of Colo- rado	Dec. 31, 1924	68,313,997	Dec. 31, 1930	76,647,697
Syracuse Lighting Co., Inc.	.... do	19,498,900	Dec. 31, 1931	24,551,252
Union Electric Light & Pow- er Co. (Missouri)	Dec. 31, 1903	14,004,000	Dec. 31, 1930	98,053,810
United Fuel Gas Co.	Dec. 31, 1916	17,967,000	.... do	30,000,000
Utah Power & Light Co.	Dec. 31, 1912	33,000,000	.... do	98,059,123
Virginia Electric & Power Co.	Dec. 31, 1925	48,150,304	Dec. 31, 1933	77,238,072
West Texas Utilities Co.	Dec. 31, 1927	29,979,165	Dec. 31, 1930	46,775,675
Total, 25 companies ...	.....	1,035,972,069	.....	1,876,389,005

* *Utility Corporations*, No. 72-A, pp. 321, 322.

TABLE 25

COMBINED CAPITAL AND OTHER LIABILITIES AND SURPLUS OF THE COMPANIES
EXAMINED BY THE FEDERAL TRADE COMMISSION*
(000 omitted)

	18 Top-holding Companies		42 Sub-holding Companies		91 Operating Companies	
	Amount	Per Cent of Total	Amount	Per Cent of Total	Amount	Per Cent of Total
Capital stock:						
Common	\$1,587,949	38.5	\$1,179,808	37.4	\$885,214	22.2
Preferred	744,580	18.1	691,329	21.9	640,736	16.1
Paid-in surplus	174,037	4.2	121,878	3.9	18,833	.4
Total	2,506,566	60.8	1,993,015	63.2	1,544,783	38.7
Long-term debt	864,196	21.0	436,172	13.8	1,479,640	37.1
Total capital liabilities	3,370,762	81.8	2,429,187	77.0	3,024,423	75.8
Current and accrued liabilities:						
Notes and accounts payable:						
Affiliated companies and subsidiaries	104,814	2.6	512,357	16.2	345,664	8.7
Other	240,745	5.8	40,961	1.3	51,239	1.3
Other current and accrued liabilities	45,718	1.1	16,755	.5	79,776	2.0
Total current and accrued liabilities	391,277	9.5	570,073	18.0	476,679	12.0
Retirement reserves .....	.....	.....	.....	.....	243,724	6.1
Surplus reserves	17,501	.4	17,206	.6	24,464	.6
Earned surplus	123,051	3.0	19,099	.6	182,725	4.6
Capital surplus	217,179	5.3	119,466	3.8	35,839	.9
Total	4,119,770	100.0	3,155,031	100.0	3,987,854	100.0

* *Utility Corporations*, No. 72-A, pp. 308, 309, 311.

operating and holding companies and partly in the pyramiding policies of the holding companies. The assets of the operating companies consist largely of physical properties used in serving the consuming public; such properties afford admirable security for the issuance of mortgage bonds and the stability of the earnings of the operating companies make their bonds attractive to the public. On the other hand, the assets of the holding companies consist largely of the securities of subsidiaries and hence the holding company could issue only collateral trust bonds and debentures. Since the investment standing of such bonds was not so high as that of the mortgage bonds, the holding companies resorted more largely to the issue of preferred stocks and common stocks. The relative proportions of these three classes of securities issued by holding and operating companies are summarized in Table 26.

It may be suggested that the holding companies financed a larger proportion of their capital costs through the issuance of bonds than Table 26 would seem to indicate. The effect of the inflation of assets described in the preced-

TABLE 26

RELATIVE PROPORTIONS OF SECURITIES ISSUED BY THE HOLDING COMPANIES AND OPERATING COMPANIES EXAMINED BY THE FEDERAL TRADE COMMISSION *

	<i>18 top-holding companies (Per cent)</i>	<i>42 sub-holding companies (Per cent)</i>	<i>91 operating companies (Per cent)</i>
Common stocks, including paid-in surplus	52.3	53.6	29.9
Preferred stocks	22.1	28.4	21.2
Long-term debt	25.6	18.0	48.9
Total	100.0	100.0	100.0

* *Utility Corporations*, No. 72-A, p. 313.

ing section was to make the common stock representative of substantial write-ups in the assets of the underlying operating and sub-holding companies. An elimination of the write-ups and a reduction of the common-stock equity proportionally, would change these ratios.

Referring again to Table 25, the current and accrued liabilities exhibit certain characteristics that call for comment. The notes and accounts payable to affiliated interests represent intercompany loans. It is to be observed that these intercompany loans amounted to 8.7 per cent of the total liabilities of the operating utilities. Such loans were commonly made for the purpose of financing construction and other capital expenditures, and were carried as open-book accounts by the holding company. In some instances these intercompany loans were of considerable assistance to the operating companies, enabling them to undertake necessary construction while awaiting more favorable conditions in the investment market before issuing their permanent securities. In other cases, unfortunately, these intercompany loans were more important as a source of profits to the holding company than as an assistance to the operating utilities. Accounts payable to affiliated companies in the balance sheet of the top-holding companies presumably represent so-called "up-stream" loans—that is, the operating company or the sub-holding company is financing the holding company. Notes and accounts payable to other than affiliated interests in the balance sheet of the top-holding companies is indicative of a common tendency of the 1920's; the holding companies frequently borrowed on short-term notes from commercial and investment banks.

At the moment only passing attention is required by the various surplus accounts in Table 25. The discussion of write-ups has indicated sufficiently the source of part of these surpluses. For example, the total write-ups in the fixed assets of the sub-holding companies was \$353,370,035, and \$119,466,021 of this was recorded as capital surplus. The discussion of the earnings and income accounting of the holding companies in a subsequent section will reveal the significant facts with respect to the earned surplus and reserves of holding companies.

Table 25 has two deficiencies in presenting a satisfactory picture of the capi-

TABLE

RATIOS OF HOLDING-COMPANY AND SUBSIDIARY-COMPANY CAPITALIZATIONS TO
AS OF DEC

Holding company	Holding Company—Outstanding Capitalization				Ratio of holding-company capitalization to total consolidated capitalization (Per cent)
	Long-term debt	Preferred stock	Common stock and surplus	Total holding company capitalization	
American Gas & Electric Co.	\$50,000,000	\$33,715,837	\$109,360,280	\$193,076,117	49.99
American Power & Light Co.	50,810,500	177,202,520	67,432,267	295,445,287	40.98
Associated Gas & Electric Co.	216,502,328	.....	¹ 154,448,279	370,950,607	48.62
Central & South West Utilities Co. ....	.....	24,665,708	2,300,052	26,965,760	14.78
Cities Service Co.	190,715,004	120,428,253	291,972,770	603,116,027	58.48
Columbia Gas & Electric Corp.	104,539,000	117,483,644	220,411,057	442,433,701	79.77
Electric Power & Light Corp.	31,000,000	86,055,267	79,956,728	197,011,995	33.96
Midland United Co.	242,600	21,758,020	47,276,195	69,276,815	23.47
National Power & Light Co.	24,500,000	27,971,200	123,974,594	176,445,794	33.47
New England Power Association	52,880,000	64,638,709	65,732,232	183,250,941	52.80
North American Co.	25,000,000	30,333,900	241,391,918	296,725,818	40.09
North American Light & Power Co.	26,057,500	18,555,021	17,041,056	61,653,577	21.57
Standard Gas & Electric Co.	73,649,500	87,350,943	161,619,050	322,619,493	31.01
United Gas Improvement Co. ....	.....	75,146,600	282,508,768	357,655,368	50.61
Utilities Power & Light Corp.	50,000,000	18,053,400	42,218,374	110,271,774	31.75
Total	895,896,432	903,359,022	1,907,643,620	3,706,899,074	43.57

tal structure of the units in the holding-company systems. First, it is a composite or average picture which does not suggest the differences that existed between different holding-company systems. And secondly, it does not eliminate the intercompany holding of securities within the same system. Between twenty and twenty-five per cent of the securities of subsidiary companies were commonly held by holding companies higher in the pyramid. Usually the voting stocks of the underlying companies were held by the holding companies, but certain amounts of preferred stocks and bonds were also in the possession of holding companies, often only temporarily as an incident in the financing of the subsidiary. Table 27 corrects this defect in part by eliminat-

27 *

TOTAL CONSOLIDATED CAPITALIZATION OF CERTAIN HOLDING-COMPANY GROUPS
31, 1933

<i>Subsidiary Companies—Outstanding Capitalization</i>					<i>Total consolidated capitalization</i>
<i>Long-term debt</i>	<i>Preferred stock</i>	<i>Common stock and surplus applicable to minority interests</i>	<i>Total outstanding capitalization of subsidiary companies</i>	<i>Ratio of capitalization of subsidiary companies to total consolidated capitalization (Per cent)</i>	
\$144,439,400	\$48,699,079	.....	\$193,138,479	50.01	\$386,214,596
314,819,300	109,936,450	\$773,544	425,529,294	59.02	720,974,581
325,840,227	.....	¹ 66,164,444	392,004,671	51.38	762,955,278
108,207,000	47,260,517	28,586	155,496,103	85.22	182,461,863
265,511,749	118,821,900	43,927,724	428,261,373	41.52	1,031,377,400
62,128,800	48,615,900	1,483,468	112,228,168	20.23	554,661,869
254,511,974	117,550,450	11,096,874	383,159,298	66.04	580,171,293
141,729,050	84,011,112	97,715	225,837,877	76.53	295,114,692
255,531,500	94,600,290	541,640	350,673,430	66.53	527,119,224
99,305,800	49,162,477	15,351,425	163,819,702	47.20	347,070,643
291,521,000	136,901,588	14,981,000	443,403,588	59.91	740,129,406
161,866,000	62,330,651	12,936	224,209,587	78.43	285,863,164
406,886,754	236,789,050	73,921,024	717,596,828	68.99	1,040,216,321
245,093,500	75,391,650	28,510,413	348,995,563	49.39	706,650,931
164,677,352	58,583,848	13,773,870	237,035,070	68.25	347,306,844
3,242,069,406	1,288,654,962	270,664,663	4,801,389,031	56.43	8,508,288,105

¹ Includes stated value of preferred stock.* Source: *Utility Corporations*, No. 72-A, pp. 318, 319.

ing the intercompany holdings of securities and presenting the capitalization, including surplus, on a consolidated basis.

From Table 27 it appears that the outstanding securities of the subsidiary companies exceeded substantially the volume of holding-company securities outstanding in the hands of the public. The subsidiary companies' outstanding capitalization consisted chiefly of senior securities, funded debt and preferred stock; while the capitalization of the holding companies consisted largely of common stock and surplus. Long-term debt constituted only 24.17 per cent for the holding companies and 67.52 for the subsidiary companies. However, it is equally important to notice that some of the holding com-

panies departed radically from the norm; Associated Gas and Electric Company and Utilities Power and Light Corporation had unusually large debts; other holding companies had no debt at all. The proportion of holding-company debt would have been greater if their capitalizations had been examined at an earlier date. The proportion of preferred stock was not very different for the two categories—24.37 per cent for the holding companies and 26.84 per cent for the subsidiary companies. Common stock and surplus constituted 51.46 per cent for the holding companies and only 5.64 per cent for the subsidiary companies; this low proportion for the subsidiary companies was due to the fact that most of their common stock was owned by the holding companies.

PURPOSES FOR WHICH SECURITIES WERE ISSUED. Operating utilities commonly issued securities to acquire funds for the construction or acquisition of property, or to refund outstanding obligations. The holding companies issued securities for these purposes, and also for other and sometimes indefensible purposes. In the present discussion it will be convenient to consider the security issues of holding corporations and their subsidiaries with respect to nine objectives:

(1) Securities were issued to affiliated interests for property or for securities. In some instances the occasion was the transfer to an operating subsidiary of physical properties acquired by the holding company for the purpose of effecting a merger. In other instances, the issuance of securities accompanied the organization of a new intermediate holding company. Securities have likewise been issued by operating utilities in payment for construction performed by affiliated construction and engineering companies.

(2) Securities were frequently issued in payment for property or securities acquired from nonaffiliated interests. The fact that securities were issued in transactions characterized by arm's-length bargaining was no guarantee against stock-watering and the issue of securities in amounts that were excessive by comparison with either the cost or the earning capacity of the properties acquired. Even in dealings with nonaffiliated interests, there were often intermediaries that received a profit from the transaction in the form of securities of the acquiring corporation. In many acquisitions, the prices paid to nonaffiliated interests reflected large write-ups that had previously been capitalized in the asset accounts of the acquired properties.⁴⁵

(3) Securities have been issued for cash or book credit. Where securities are issued for "book credit," it may be assumed that the transaction has been between a holding company and its subsidiary. The holding company presumably advanced funds to the subsidiary on open-book account, perhaps for the purpose of financing new construction or some other acquisition of property, and the subsidiary discharged its indebtedness through the issue of securities to the holding company, leaving the holding company to retain the securities or to sell them for cash, whichever should appear more desirable.⁴⁶

⁴⁵ In the organization of the Niagara Falls Power Co. in 1918, \$26,000,000 in preferred and common stocks were issued in payment for the properties of three companies, whose accounts already included write-ups of \$17,531,621. The consolidation was authorized by a special act of the New York legislature. (*Utility Corporations*, No. 72-A, p. 331.)

⁴⁶ On some occasions, the subsidiary company provided the holding company with funds to

(4) Securities were issued for services. Officers and directors of the holding companies, promoters, bankers, and syndicates, all received securities either in payment for services or as bonuses. In the early years of the utility industries the practice of issuing securities to promoters was not uncommon; in later years numerous instances of such issues by holding companies have been found.⁴⁷

(5) Securities have been issued as dividends. The dividends which have been paid in securities have been of two types: an occasional stock dividend arising out of the accumulation of an earned surplus, and the regular payment of periodic dividends in the form of securities.⁴⁸

Stock dividends of the "occasional" variety raise primarily a question of the administration of corporate income and surplus, and may be more appropriately discussed in a subsequent section. Such dividends are frequently declared by other than utility corporations and are quite justifiable where (i) the earned surplus is sufficient to more than cover the dividend, (ii) earnings at least equivalent to the amount of the stock dividend have been permanently invested in the enterprise, (iii) the issuance of the stock dividend will not have an adverse effect upon the credit of the corporation or its future capacity to raise capital, and (iv) the circumstances surrounding the stock dividend have been characterized by complete and timely disclosure of all facts to the stockholders.

The payment of regular and periodic stock dividends, either in substitution for, or in addition to, a cash dividend presents a more involved question of policy. Such a dividend was regularly used by a number of the holding companies: The North American Company, the Associated Gas and Electric Company, American Gas and Electric Company, and Cities Service Company. The only excuse for such a policy is continuous growth by the corporation which requires all of its cash income for reinvestment, and even in this circumstance sound public policy would indicate a preference for the payment of cash dividends and the sale of additional stock to the stockholders, giving the individual stockholder a chance to decide whether he preferred to increase his investment or not. In too many instances, the resort to a regular stock dividend served to conceal the inadequacy of the system's earnings, and permitted the company to continue the appearance of dividend payments that

finance the acquisition of new properties through the delivery of its own securities to the parent company before the purchase of the new property. Such seems to have been the practice with the Foshay companies. When W. B. Foshay Co. went into receivership there was a sum of more than \$5,500,000 which the Public Utilities Consolidated Corp. had conveyed to the Foshay Co. in payment for properties contracted for, but not delivered. (*Utility Corporations*, No. 72-A, pp. 326-327.)

⁴⁷ In a single year, 1925, W. B. Foshay Co. issued \$167,000 of common stock as extra compensation to its officers, with W. B. Foshay receiving \$117,500 of the total. The American Power & Light Co. issued to a syndicate including the Electric Bond & Share Co. and William P. Bonbright & Co., \$5,500,000 of common and \$2,500,000 of preferred for a cash consideration of \$2,500,000, which was used to acquire certain securities from Electric Bond & Share Co. The syndicate sold blocks of \$1,000 of preferred stock and \$800 of common stock to investors for \$1,000. \$3,500,000 of common stock went to the syndicate for commissions and profits. (*Utility Corporations*, No. 72-A, pp. 335-336.)

⁴⁸ The issue of securities as a dividend should be distinguished from the "stock split," which simply multiplies the number of shares and correspondingly reduces their par, or stated, value without any effect upon the corporate surplus account.

could not have been made if an equivalent sum in cash had to be assembled and paid out. In the case of at least one holding company, the Cities Service Company, it seems clear that the payment of the stock dividend served to create a more favorable market for the sale of new securities.⁴⁹

(6) Securities were sometimes issued as bonuses with other securities. Where such bonus issues were made by a subsidiary company to its holding company, usually in the form of common stock, the holding company was enabled to retain control with a proportionally smaller investment than had previously been required.⁵⁰

(7) Securities were issued in payment for contracts. The story of the write-ups in utility assets included reference to the intercompany sale of various servicing contracts by the Associated Gas and Electric Company to its affiliated service organizations; those write-ups were balanced by the issue of securities by the service companies to the Associated Gas and Electric Company. In some instances the securities ran for a longer term than the contracts conveyed in exchange. Other holding companies and their subsidiaries issued securities for similar purposes and with no more investment to justify them.

(8) Securities have been issued for good-will and other intangibles, such as going value, water rights and franchises. The payment of securities for such intangibles is not indicative of their value, especially when the transaction has been between affiliated interests. None of these intangibles is likely to be an important item of cost to the utility, and usually their actual cost is impossible to discover. As with other utility assets, sound public policy would limit the amount of the security issue to the actual legitimate cost of the intangible asset; and of course, there might be many instances where securities should not be issued to the full cost, where, for example, the value of the intangible asset to the utility is uncertain and dubious.

(9) Securities were extensively issued to retire outstanding securities and to refinance maturing obligations. The issue of securities for the purpose of retiring outstanding securities was presumably for the purpose of substituting a low-interest bond for one bearing a higher effective rate of interest, or for the purpose of substituting a contingent liability, such as a preferred or common stock, for a fixed interest-bearing obligation. The issue of securities for the purpose of refunding maturing obligations has been characteristic of the utility industries; debt has been considered a permanent part of the capitalization. While this attitude is perhaps understandable and not open to criticism in an industry where the total capital investment is constantly and significantly expanding, such a policy is highly questionable when an industry or corporation reaches a condition of stability.⁵¹ In recent years there has been a trend toward the inclusion of sinking-fund provisions in bond indentures, so that in the future fixed debt will probably not be such a "fixed" part of utility capitalizations.

Many holding-company systems have made a regular practice of retiring outstanding securities whenever there was an opportunity for a saving. Since

⁴⁹ *Utility Corporations*, No. 72-A, pp. 336-338.

⁵⁰ *Utility Corporations*, No. 72-A, p. 338.

⁵¹ The railroads would be in a much stronger financial position if they had amortized their bonded debt as rapidly as possible in the period after the railway system ceased to expand.

the refunding of securities imposes certain costs that offset the savings from refunding, it is apparent, on looking back, that many companies would have realized larger net savings if they had not been premature in their refunding operations. It has also been the policy of holding companies to take every opportunity to reduce their fixed obligations through the substitution of junior securities, preferred stocks, and common shares for fixed-interest obligations. Some companies sought to accomplish this purpose through attaching conversion privileges to their securities, and others made "offers" to their security holders to exchange their securities for others. The Associated Gas and Electric Company was the most persistently active in urging exchanges of securities on its investors.⁵² Such exchanges of securities enabled many companies to effect a strengthening of their financial position, but as experience proved, at the expense of the investors.

THE DISPOSAL OF SECURITIES. *The standard practices.* Holding-company domination of the utility industries produced notable changes in financing methods. In an earlier period it had been the practice of the officers of the utility company to raise funds through local bankers or, in the case of larger companies, to negotiate directly with investment banking houses or syndicates. Subsequently all security issues tended to be handled through the holding companies, which sometimes retained the securities of the subsidiaries and issued their own stocks and bonds to the investing public and sometimes arranged for the sale of the subsidiary company's issues. Commissions were characteristically paid to the holding company, or to its financing subsidiary, for aid in raising capital; indeed, commissions were commonly paid even when the issue was sold through an investment banker and even though the officials of the issuing corporation could have arranged the financing.⁵³ In such instances the payment of a fee to the holding company must be regarded as little other than a toll levied by those in control. In other instances the issuance of the securities to the holding company and the payment of a large fee for the finding of a buyer may be regarded as a device to comply with a statute requirement that the securities be issued at par, the amount of the "fee" concealing the discount at which the securities had to be sold to the investing public.

Issues of securities were generally sold through bankers, investment houses or syndicates. Even sales in customer-ownership campaigns and through the offer of "rights" were usually underwritten by banking syndicates. Commonly the same banking organization functioned continuously, almost in the ca-

⁵² "Associated Gas & Electric System has followed this policy more extensively than any other system studied by the Commission. It was found that literally thousands of exchange offers were made by Associated Gas & Electric Co. to the holders of its own securities and those of subsidiary, affiliated, associated, and underlying companies. . . . Every little shift in the financial wind caused this system to flood its security holders with some exchange offer or other, and such security holder had little peace or time to enjoy the income from any one investment before he was besieged with offers to trade it in on something else. The ultimate objective in many cases has been the issuance by Associated Gas & Electric Co. of its class A stock, so that many investors formerly holding first-mortgage bonds secured as to principal and interest by fixed assets of operating companies now hold a non-voting common stock with little or no market value, and which has paid no dividends for 2 or 3 years." (*Utility Corporations*, No. 72-A, pp. 344-345.)

⁵³ *Utility Corporations*, No. 72-A, p. 347.

capacity of an affiliate, for a particular holding-company system. Of more than \$300,000,000 of securities handled for its subsidiaries by the North American Co. from 1920 to 1930, substantially all were sold through syndicates headed by Dillon, Read, and Company.⁵⁴

Most of the larger utility systems have made some use of customer-ownership campaigns. Although there was sometimes a continuing effort to sell securities to customers, it was more commonly an intensive short-lived campaign accompanied by much propaganda concerning the advantages to the customer of having a sound and stable security and of being an "owner" of the utility, and concerning the benefits to the industry from such relationship. It may be noted that the securities sold were generally preferred shares without voting power. The objective was less the raising of additional capital, though customer-ownership campaigns sometimes produced capital at a lower cost than it could be secured through other means, than the political effect in stifling criticism that was expected to result from customers having a "stake" in the enterprise.

Many holding companies arranged for the sale of securities to their officers and employees. The Electric Bond and Share Company had a plan for selling securities to its officers at \$40 per share at a time when the market price was \$139 a share; a subsequent collapse in the market price forced the abandonment and rescission of the scheme.⁵⁵ By contrast, the Associated Gas and Electric Company had several employees' stock-subscription plans and "allowed" the employees to subscribe for Class A stock at stated prices and to pay on the installment basis. The employees sustained large losses on their purchases, and the New York Public Service Commission characterized the scheme as effecting a compulsory reduction in salaries.⁵⁶

Securities were also sold through the issuance of rights and options. "Rights" were commonly issued to existing stockholders entitling them to subscribe pro rata for new issues of securities. These rights were usually transferable so that if the stockholder did not wish to exercise his right he might realize an extra cash "dividend" by selling it. Options and warrants were occasionally attached to bonds and other senior securities, entitling the purchaser to buy other securities, usually common stocks, within stipulated periods at specified prices.⁵⁷

Finally, it must be noted that some holding companies had their own selling organization and sought to place their securities directly with the investing public. The Associated Gas and Electric Company used its own employees and those of its subsidiaries to sell the securities of the holding company. Henry L. Doherty and Company functioned as the selling organization for the securities of Cities Service Company, and sold securities door-to-door.

Market manipulations. One of the most culpable chapters in the history of utility financing concerns the manipulation of the market prices of their se-

⁵⁴ *Utility Corporations*, No. 72-A, p. 347.

⁵⁵ *Utility Corporations*, No. 72-A, p. 360.

⁵⁶ *Re New York State Elec. & G. Corp.*, P.U.R. 1932E, 1, 30-31 (1932).

⁵⁷ As an illustration there may be cited the Associated Gas & Electric Co.'s $4\frac{1}{2}$ per cent convertible debentures of 1948 (issued in 1928), which carried detachable stock-purchase warrants to subscribe for a stock unit consisting of $\frac{6}{100}$ of 1 share of Class A stock and $\frac{39}{100}$ of 1 share of common stock for \$40. (*Utility Corporations*, No. 72-A, p. 350.)

curities by certain holding-company managements. By deliberately creating artificial market quotations, they deluded the investor into paying high prices for securities whose asset values and earnings would not have justified the payment of a fraction of the issue price. These market manipulations were furthered by improper and misleading accounting practices with respect to income and expense. Losses of hundreds of millions of dollars were thus imposed on investors with no offsetting gain except the temporary profit to the market manipulators.

One of the most spectacular examples of stock-market manipulation reported by the Federal Trade Commission was that carried on by Samuel Insull and H. L. Stuart of Halsey, Stuart, and Company in the stock of the Middle West Utilities Company. The Middle West Utilities Company found itself unable to continue meeting its interest and dividend obligations, and sought to reduce these costs by refinancing some of its outstanding securities. In order to effect the necessary reduction in interest and dividend charges, it was necessary that its new issue of stock should be sold at \$200 a share. At the time the market quotations on relatively small sales ranged between \$159 and \$170 a share. In order to assure the sale of the new stock at \$200 a share, the current market price, it was thought, had to be between \$250 and \$300 a share. Messrs. Insull and Stuart, with certain others associated with the management of the Insull properties, organized a buying campaign on the Chicago Stock Exchange and the New York Curb Exchange for the purpose of pushing the market quotation to the desired level.⁵⁸ The syndicate began buying at \$181 on June 17, 1929; on July 15 the price reached \$308; on July 29, the date on which the plan for reconstituting the financial structure of Middle West Utilities was announced, the price was \$410; and on July 31 the closing price on the New York Curb Exchange was \$492. Since only a small volume of shares ordinarily changed hands on any one day, the boosting of the price of the stock was accomplished without any great volume of buying. The plans for refinancing almost miscarried when the stock market crashed in October before the completion of the subscription to the new securities, but the syndicate supported the market with heavy buying long enough to enable the refinancing to be completed. In the process of supporting the market, and in the earlier buying to create an artificial price setting for the announcement of the plan, the syndicate accumulated nearly 412,000 shares of Middle West Utilities Company at a cost of \$17,647,334.12. Since these securities could not be sold directly on the market without depressing the price to such an extent that a loss would have been sustained, a plan was conceived of selling these accumulated shares to two Insull investment companies, and to the accomplishment of further manipulations, the syndicate disposed of its accumulations for a cash consideration of \$18,596,831.20.⁵⁹

One of the most persistent manipulators of the market prices of holding company stocks was the Doherty management of Cities Service Company. Through purchases by brokers on the New York Curb Exchange, Henry L.

⁵⁸ It is interesting that H. L. Doherty & Co. was retained to do the buying of the Middle West Utilities stock on the New York Curb Exchange.

⁵⁹ *Utility Corporations*, No. 72-A, pp. 565-587

Doherty and Company created most of the demand for Cities Service common stock and kept the market price at an artificial level from April 21, 1927, to the end of 1930. During this period Cities Service Company was engaged in a variety of security offerings, each of which was preceded and supported by managerial efforts to drive up the price of the stock. In consideration of the tremendous effort, the new capital which flowed into the holding-company treasury was pitifully small, as the summary of the transactions by the Federal Trade Commission reveals:

"The Commission examined the operations of Henry L. Doherty & Co. in Cities Service Co. common stock during the 3 years and 9 months from April 21, 1927, to December 31, 1930. During that time, Henry L. Doherty & Co. effected sales through selling groups, distributing groups, through its own retail sales organization, through a small army of employees of the operating subsidiaries of Cities Service Co., to warrant-exercising debenture holders and over the counter to an extent equivalent to 41,488,512 shares of the present no-par common stock; and the invoice proceeds of these sales amounted to \$1,146,518,779.17. During the same period, and simultaneously with the accomplishment of these sales, Henry L. Doherty & Co.'s market purchases of this stock amounted to 34,057,929 shares and entailed an expenditure of \$965,710,037.65. The number of shares of new original issue that were issued or issuable as a result of the aforesaid sales was only 5,649,997; and the net proceeds available to the treasury of Cities Service Co. amounted to only \$80,741,657.57. The market purchases consisted in part of purchases effected over the counter,' but mostly of purchases made through brokers on the New York Curb Exchange. That is, in order to make a net issue of less than 5,650,000 shares, the organization effected sales of a volume more than seven times as great and simultaneously purchased, mostly on the New York Curb Exchange, a volume nearly six times as great. Due to the enormous expenditure of funds made in effecting those purchases, out of the gross proceeds of the sales, amounting to more than \$1,146,000,000, less than \$81,000,000, i.e., only about 7 per cent, as already stated, was available to the treasury of Cities Service Co. as new capital funds."⁶⁰

Other holding-company managements engaged in the purchase of their companies' stocks on the organized exchanges, some with the intent and effect of creating an artificially high price therefor, and others, like the Byllesby interests, for the purpose of supporting the market without creating an artificial price.

Practices associated with the offer of securities. A number of practices have in the past been associated with the offer of new securities by holding companies and their subsidiaries. As noted before, it was a common policy to organize an underwriting syndicate to guarantee the success of security offers, even when the new securities were being sold to existing stockholders through an offer of "rights." It was the practice of some companies to have the underwriting done by a financing subsidiary of the holding company. The value of an underwriting of securities by a wholly owned subsidiary of the system that

⁶⁰ *Utility Corporations*, No. 72-A, p. 543.

was issuing the securities was, of course, purely imaginary; the "under-writing" served only as a rather poor excuse for collecting a fee.

A natural skepticism is also aroused by the payment of commissions and bonuses to holding companies in connection with the issuance of securities by subsidiaries. Yet such commissions were a commonplace source of revenue for many holding companies.⁶¹ Where the holding company performed an essential service for or incurred expense on behalf of the subsidiary company, commissions were presumably justifiable. But where the officers of the operating company were competent to arrange the sale of their securities on terms as favorable as could be obtained through the holding company, the payment of such commissions represented an unwarranted diversion of funds to the holding company.

Mention has already been made of the fact that the holding company often served as the channel for securing nominal compliance with state laws requiring securities to be issued at par, although the securities were in fact sold to the investor at a substantial discount. There were two common devices through which formal compliance was secured: the securities were sold at par to an affiliated company which thereafter disposed of them for whatever the market conditions would permit; or the issuing corporation sold the securities at par to an affiliated corporation, at the same time paying a "commission" equal to the discount at which the securities were purchased by investors plus the costs of effecting the sale.⁶²

The practice of pyramiding has already been discussed at length. Yet it should be noted that pyramiding has serious implications for the investor. The securities of the holding company, even though they are designated as bonds and preferred stocks, are highly speculative investments, their market prices being extremely sensitive to changes in the earnings of the underlying properties. Even the experienced investor is not likely to realize clearly the nature of his investment in the securities of holding companies, the character of the assets on which the stock or bond rests, or the source of the funds with which his dividends or interest are paid. Furthermore, the pyramided structure affords opportunities "for the manipulation of accounts, secrecy as to financial conditions, concealment of assets, liabilities, profits or losses, diversion of profits or losses through intercompany channels," to the detriment of the investor and of the consuming public.⁶³

A description of the characteristics of the various securities which were issued by holding companies is beyond the scope of the present discussion. While the typical capital structures of holding and operating companies have

⁶¹ *Utility Corporations*, No. 72-A, pp. 364-365.

⁶² For example, on February 17, 1923, the Kansas Gas & Electric Co. agreed to pay the American Power & Light Co., its holding company, a commission of 10 per cent on the par value of its 7 per cent preferred stock if the American Power & Light Co. would find some financially responsible person to subscribe at par for 15,000 shares; on the same day American Power & Light Co. agreed to pay to Electric Bond & Share a commission of \$10 per share if it would subscribe at par to 15,000 shares of the preferred stock of the Kansas Gas & Electric Co.; and also on the same day, Electric Bond & Share Co. informed the Kansas Gas & Electric Co. that it would subscribe for its shares at par. (*Utility Corporations*, No. 72-A, p. 353.)

⁶³ *Utility Corporations*, No. 72-A, p. 357.

been suggested earlier in the present section, no attempt has been made to indicate the extremes of complexity that sometimes characterized the capital structures of certain holding companies. In contrast to two holding companies that were completely financed by a single class of common stock, was the Associated Gas and Electric Company, which had "3 classes of common stocks, 6 classes of preferred stocks, 4 classes of preference stock, 7 issues of secured bonds and notes, 24 classes of debentures, many of which were convertible into preferred and common stocks of the holding company or its subsidiary or affiliated companies, and 4 series of investment certificates," and finally, various stock-purchase warrants and rights.⁶⁴ Not even a trained analyst would dare to state precisely the value of the junior securities, or even the value of some of the debt, in such a confused capital structure.⁶⁵ In the realm of manufacturing holding-company securities, as in other fields of manufacturing, the time had come to call a halt to the multiplication of "style goods" and to adopt a rational degree of standardization.

SERVICING CONTRACTS WITH SUBSIDIARIES. *Introductory.* The present discussion of servicing contracts between holding companies, or their service affiliates, and subsidiary operating companies refers primarily to the system as it developed prior to the adoption of federal regulation of holding companies. The more recent developments are a part of the discussion of the regulation of the utility industry.⁶⁶ Though service contracts between holding companies and their subsidiaries had been in existence for many years, there was relatively little known about either the character or the costs of such service arrangements prior to the Federal Trade Commission's investigation.

Much publicity had been given to the advantages which the investor and the consumer derived from the centralization of managerial functions. By providing for the full utilization of the time of specialists, through placing them in charge of the operations of several utilities, the holding company was able to provide each subsidiary with skilled management such as only the largest could afford, at a cost which was not beyond the means of the small

⁶⁴ *Utility Corporations*, No. 72-A, p. 305.

⁶⁵ In short, utility holding companies issued every security that was known to corporate finance and then created new forms that were like nothing known before. Some of the securities thus fashioned defied classification. Two illustrations will suffice. The first were the so-called "5½ per cent convertible investment certificates" issued by Associated Gas & Electric Co. in 1928; they were ten-year \$1,000 certificates, convertible at the option of the holder into certain shares of Eastern Utilities Investing Corp. (a company affiliated with, but not controlled by, Associated Gas & Electric Co.); to wit, 3 shares of \$5 cumulative prior preferred stock; 2 shares of \$6 cumulative preferred stock, 5 shares of participating preference stock, and 5 shares of Class A common stock; and, if they should not be converted within the first 5 years, the certificates were convertible at the option of the Associated Gas & Electric Co. into its own \$5.50 dividend series preferred stock at the rate of 1 share for each \$100 par value.

The second "sport" was the offer, in 1929, to the stockholders and holders of registered convertible securities, at \$113, of the Associated Gas & Electric Co.'s "\$8-interest-bearing allotment certificates"; these certificates were without par or principal value or maturity date; but after July 1, 1930, the holder was entitled to receive therefor the following: (i) 1 share of Class A common stock of General Gas and Electric Corporation; (ii) ½ of a share of \$5-dividend-series preferred stock of Associated Gas & Electric Co., and (iii) 1 debenture right of Associated Gas & Electric Co.; and the latter "debenture right" entitled the holder to purchase, on or before January 2, 1931, at a price of \$40, 1/25 of 1 share of Class A stock and 1/25 of 1 share of common stock of Associated Gas & Electric Co. (*Utility Corporations*, No. 72-A, pp. 307 and 306.)

⁶⁶ Chapters XVIII and XIX.

unit. In addition, the availability of highly specialized technicians to handle the more complicated problems of utility management made it feasible to place the routine operations under the immediate direction of less costly employees, effecting a further saving without any sacrifice in the quality of management which the company enjoyed. There is no doubt that the economies of specialized and centralized management appeared to the public as one of the big achievements of the holding-company system.

Considerable variation existed in the policies followed by the several holding companies with respect to their servicing contracts. Some performed services only for their own subsidiaries; such was the policy of the Electric Bond and Share Company. Other service organizations, notably Stone and Webster, derived a large part of their revenue from companies with wholly independent managements. The beginnings of specialized service organizations arose among engineering firms, such as W. S. Barstow and Company, and Stone and Webster, that performed services, largely of a construction character, for independent companies. But with the development of the holding-company system, their interest in assuring the maximum of efficiency in their subsidiaries, plus the opportunities to profit from the performance of these services, soon led most holding companies to develop service organizations.

A description of the services performed. The services performed for the operating utilities and other subsidiaries may conveniently be classified as managerial services and engineering services.

The management service has included a great variety of activities, the exact scope depending upon the policy of the holding company with respect to the establishment of more specialized service organizations, the multiplication of such special service organizations affording an opportunity to charge additional fees. The management service generally involved the assumption of responsibilities for the routine conduct of the corporation and often included the assumption of the policy-making functions as well. The management was responsible for the corporate organization and its personnel, for hiring the employees and fixing the terms of their employment, for the production and distribution of the utility's service to consumers and for all relations with them, for the preparation of plans for expanding the plant and meeting future demands for service, for the installation of an accounting system and the preparation of necessary reports, and for the conduct of the corporation's relations with the regulatory and other governmental authorities. The executive officers were provided by the service agency; they might be paid directly by the utility client or by the service organization. Sometimes the general management service included such matters as purchasing, appliance merchandising, legal service, accounting, advertising and public relations, and financing services; and sometimes these particular services were the object of a separate contract with a specialized service organization.

(1) Management contracts. The Electric Bond and Share Company's managerial service contract may serve as an illustration. It has been said that the general management contract listed seventy-eight classes of activities with respect to which the Electric Bond and Share was prepared to serve its sub-

sidiaries.⁶⁷ These contracts were entered into by the Electric Bond and Share Company with its subsidiaries, both sub-holding companies and operating utilities, except for the American Gas and Electric Company and its subsidiaries for whom the parent company performed only financial services. The contract provided that the executives of Electric Bond and Share Company should keep in touch with the business of the subsidiary and be prepared to assist in all matters pertaining to policy-making or routine affairs. Since the holding company sought to concentrate as much as possible of the business in its New York office, provision was made for individuals in the New York office to function as executive officers of the subsidiary and to be elected to its board of directors. Immediate responsibility for the direction of the affairs of the subsidiary was lodged in one or more of the service company's operating specialists who served as sponsors for the operating company. Though not in continuous residence, they visited the property and devoted such time to its affairs as circumstances required. Similarly, a senior engineer and a senior accountant served as sponsor engineer and sponsor accountant, respectively.

Among the activities comprehended in managerial supervision were accounting, appraisals, budgeting, engineering, insurance, merchandising, purchasing, rates, reports, statistics, and tax services. A uniform system of accounting and reporting was installed for each operating company; the reports were carefully analyzed; comparisons were made with the performance of other utilities; and any special problems were the occasion for an investigation by an expert. The engineering services under the general management contract were concerned only with consulting activities. Purchasing contemplated the negotiation of volume contracts in order to obtain maximum discounts. The management was prepared to help the utility develop new business and in that connection to undertake merchandising of particular categories of appliances.

(2) Engineering and construction. The construction of capital facilities, including the designing of engineering works and the supervision of actual construction, was commonly covered by a separate engineering contract. Under the management contract, the responsible officials might be expected to pass on the advisability of new construction, to supply plans and specifications, to do some of the preliminary engineering, and perhaps to serve in a consultative capacity. All other engineering work usually fell to an engineering firm, which might be an independent organization but which was generally an affiliate of the holding company.

The contract of the Stone and Webster Engineering Corporation will illustrate the character of the engineering service.⁶⁸ Stone and Webster were prepared to function either as consulting engineers or as designing and construction engineers. As *consulting* engineers, the organization was prepared to perform the following services:

(a) Make preliminary investigations of proposed engineering and construction work.

⁶⁷ *Utility Corporations*, No. 72-A, p. 600.

⁶⁸ *Utility Corporations*, No. 72-A, pp. 687-688.

(b) Prepare estimates of cost of proposed additions and improvements to property.

(c) Furnish general advice and assistance on construction and reconstruction work other than that for which complete engineering and construction services are to be furnished as hereinafter described.

(d) Assist in the solution of any special engineering problems that may arise in connection with the operation of your property.

(e) Make special engineering studies for improvement of plant operations and provide qualified men to instruct the local operating forces in the most economical methods of generation and distribution.

(f) Make shop inspections of machinery and equipment, under construction for your company, with the use of proper materials, accurate assembly, and prompt shipment, as objectives.

(g) Make appraisals of your property and other engineering investigations relating to property value for use in rate or other proceedings in which such evidence may be necessary, and furnish expert testimony with reference thereto before courts or regulatory authorities.

As *designing and construction* engineers, Stone and Webster Engineering Corporation was prepared to act as the engineering, construction, and purchasing department of the utility, exercising as much authority as the utility should be prepared to delegate; as engineers, the Corporation would make all necessary engineering studies and determinations, recommend the type and character of construction and of equipment, prepare plans and specifications for materials, construction, and equipment; as constructors, it would perform the construction work and install the machinery and equipment, subletting contracts where such appeared advantageous; and turning over the completed work ready for operation; as purchasing agents, it would purchase, inspect, and expedite the shipment of necessary materials and equipment; and finally, qualified men would be made available to instruct the operating company officials in the proper methods of operating and maintaining any new equipment.

(3) Purchasing. Purchasing services were ordinarily performed as a part of the general-management contract, but in some instances there was a separate purchasing affiliate, as in the case of the Associated Gas and Electric Company after July, 1928. If the service was performed by an especially established affiliate, there was an additional fee charged. The service might be limited to advice only with respect to the requirements of the utility and the preferable sources of supply. Or the service might involve a central buying organization, obtaining the maximum quantity discounts. The purchasing of materials for construction projects ordinarily came under the construction contract.

(4) Appliance merchandising. To increase their volume of business in order to secure a fuller utilization of plant capacity, utilities customarily engage in the sale of appliances—stoves, water heaters, refrigerators, et cetera—either directly, or indirectly through co-operative arrangements with local dealers. Advice as to the best means of building new business and the most effective ways of inducing consumers to buy equipment which would increase their

consumptions might be expected as one feature of the general management contract, the objective being both to increase the demand for service and to aid the operating company to realize a profit on its appliance business.

In some holding-company systems, of which the Associated Gas and Electric Company was an example, the merchandising business was taken from the local companies and performed by a merchandising affiliate for its own profit. The Associated Gas and Electric Company's plan, as it was inaugurated in December 1, 1928, was justly a target for criticism, since the operating utility continued to do all of the actual merchandising, even to bearing the selling expenses; only the cost of appliances was charged to the merchandising affiliate, although it was credited with the entire gross revenue from the sales; thus, there was diverted to the merchandising affiliate not merely the net margin which the operating companies had previously received, but their entire gross margin.⁶⁹

(5) Legal service. The management service included such legal services as keeping informed on all legal problems, recommending outside legal assistance where such seemed necessary, and co-operating with outside legal assistance in connection with financing, taxation, reorganizations, consolidations, and regulatory litigation. In some instances a special legal department or affiliate existed to render more extensive legal assistance to the subsidiaries. In the latter situation, an additional fee was customary.

(6) Financing. Certain activities in connection with the sale of the client company's securities were normally performed as a part of the management contract; such managerial services included the supervision of customer-ownership campaigns, the preparation of reports and advertising material in furtherance of a security issue, et cetera. Where a more extended service was afforded, such as advice on the character of the issue, negotiation with investment bankers, participation in the organization and conduct of underwriting syndicates and the creation of a secondary, or resale, market during the distribution of the securities, there were additional fees proportional to the responsibility which the holding company or its affiliate assumed.

(7) Accounting. Accounting service was almost invariably included as a part of the general managerial service, the only exception being the Associated Gas and Electric Company, which charged a special fee for the separate service.

(8) Advertising. Like accounting services, advertising, publicity, and promotional activities were usually included in the general management contract. There existed the usual exception, the Associated Gas and Electric Company.

The development of service organizations and the rendition of services to subsidiaries were not confined to the electric and gas utilities. The American Telephone and Telegraph Company has for many years been the most highly developed service organization in the world, and was engaged in rendering vital services to the associated Bell telephone companies before there was any significant development of the holding-company system in the

⁶⁹ *Utility Corporations*, No. 72-A, p. 629.

electric and gas fields. The services rendered by the American Telephone and Telegraph Company have included the following:

(i) The license of subsidiaries to use its patents in supplying telephone service within a specified territory;

(ii) The manufacture and supply of equipment to subsidiary companies;

(iii) The conduct of research in the development of equipment and company organization;

(iv) Advice and assistance in general engineering, plant, traffic, operating, commercial, accounting, patent, legal, administrative, and other matters pertaining to the efficient, economical, and successful conduct of the telephone business;

(v) Advice and assistance in financing;

(vi) Active assistance in measures to safeguard the efficiency and well-being of employees;

(vii) The maintenance of an organization of specialists available to the subsidiary companies; and

(viii) The operation of toll lines and the maintenance of connections between the subsidiary telephone companies.

The organization of servicing. The organization of the servicing of the subsidiary utilities followed two patterns. Either the services were performed directly by the holding company, as in the case of Electric Bond and Share Company, with the exception of its engineering and construction subsidiaries, or the services were divided among separately incorporated affiliates of the parent company, as in the Associated Gas and Electric system. A reference to the organization charts of the different holding-company systems will reveal the relation of the servicing functions to the holding company and to the subsidiaries.⁷⁰ The exact size of the servicing staffs varied with the number of subsidiary companies and the character of the services rendered, numbering several hundreds for the large systems.⁷¹

Contracts, fees, and profits. The nature of the contracts between the operating utilities and the service affiliates deserves particular attention. These contracts were negotiated between two corporate entities controlled by the same individuals, the management of the holding company. There was, in consequence, a complete absence of arm's-length bargaining, however much the language of the contract might seek to create an impression of two independent parties with the utility company capable of assuming responsibility and directing the service organization. The service affiliate, even when independently incorporated, was nothing more than a department of the holding company; it was completely controlled by the holding company and all of its profits accrued directly to the parent. The holding company, in fact, bargained with itself to determine what service should be given to the operating utility and how much of the operating utility's earnings should be absorbed to pay for the services.

The provisions for compensation for the services performed have varied

⁷⁰ *Utility Corporations*, No. 72-A, p. 154 *et seq.*

⁷¹ *Control of Power Companies*, p. 75.

for different types of service and from one system to another. The *management* contracts commonly provided for the payment of a certain percentage of the operating utility's gross revenue. The amount of the fee varied substantially from one system to another: it was 5 per cent for the Electric Management and Engineering Corporation (Middle West Utilities group) in 1925, though it was later reduced and finally abandoned for a "per diem" charge; 5 per cent for the Buffalo, Niagara, and Eastern Power Corporation (the service including some construction supervision); $2\frac{1}{2}$ per cent for the Bylesby Engineering and Management Corporation (Standard Gas and Electric system); and 1 per cent for the W. S. Barstow Management Association from 1922 to 1927, and $2\frac{1}{2}$ per cent from 1927 to 1930. A number of systems used a sliding scale, with a lower percentage fee on the successive increments of gross earnings. In its contract effective April 1, 1933, the Electric Bond and Share Company provided for the following managerial fees: 1.25 per cent on the first \$1,000,000, 1 per cent on the next \$1,000,000, 0.75 on the next \$1,000,000, 0.50 per cent on the next \$1,000,000, and 0.25 per cent on all additional revenue.⁷² It is apparent from the above examples that there was no standardization. Even when the amount of the charge was known, comparisons were difficult because of the differences in the scope of the services rendered under different contracts.

The fees for *engineering and construction* were commonly calculated on a percentage basis depending on the extent and difficulty of the work and its cost. The fees of the Stone and Webster Engineering Corporation will illustrate this. The work was divided into three categories:

(i) Class A work involved a relatively large amount of designing and a relatively large amount of service from the construction, purchasing, and other departments of the headquarters and district offices. Steam-power stations, water-power developments, substations, transmission lines, underground distributing systems, gas-generating plants, dams, reservoirs, pumping stations and purifying systems for water supply, the equipment of industrial plants, and work of a similar character were included in this category.

(ii) Class B work involved relatively less designing and relatively less service from the construction, purchasing, and other departments of the headquarters and district offices. Car barns, shops, warehouses, factory and office buildings, overhead distributing systems, interurban railway lines, gas holders, pipe lines, and similar projects were included in this category.

(iii) Class C work involved practically no designing and a relatively small amount of service from the construction, purchasing, and other departments of headquarters and district offices. City-railway track, excavation, grading, paving, and similar work fell in this category.

The fee was calculated on the basis of the "cost of the work."⁷³ The amount

⁷² *Utility Corporations*, No. 72-A, p. 605.

⁷³ "Cost of work" was defined to include the following:

(a) All materials, equipment, labor, and contracts covering these items, including the market value of material supplied by the utility.

(b) The cost of land, right-of-way, easements or other rights when negotiated for or acquired by Stone and Webster for the utility.

(c) The rental of any equipment hired and the cost of tools and construction equipment purchased, less the salvage on any sold.

of the fee varied from $9\frac{3}{4}$ per cent on projects of less than \$500,000 involving a relatively large amount of designing and construction service, to $3\frac{3}{4}$ per cent on expenditures over \$15,000,000 that involved no designing. The scale of fees⁷⁴ based on the "cost of the work" was:

Cost of work, exclusive of fee	Fee in per cent of cost of the work		
	Class A	Class B	Class C
\$500,000 and less	$9\frac{3}{4}$	$8\frac{1}{4}$	$7\frac{1}{4}$
\$500,000 to \$1,000,000	$8\frac{3}{4}$	$7\frac{3}{4}$	$6\frac{3}{4}$
\$1,000,000 to \$2,000,000	$8\frac{1}{4}$	$7\frac{1}{4}$	$6\frac{1}{4}$
\$2,000,000 to \$3,000,000	$7\frac{3}{4}$	$6\frac{3}{4}$	$5\frac{3}{4}$
\$3,000,000 to \$5,000,000	$7\frac{1}{4}$	$6\frac{1}{4}$	$5\frac{1}{4}$
\$5,000,000 to \$10,000,000	$6\frac{3}{4}$	$5\frac{3}{4}$	$4\frac{3}{4}$
\$10,000,000 to \$15,000,000	$6\frac{1}{4}$	$5\frac{1}{4}$	$4\frac{1}{4}$
Over \$15,000,000	$5\frac{3}{4}$	$4\frac{3}{4}$	$3\frac{3}{4}$

Payment for the *purchasing* service was normally included in the management fee. In the instance of Utilities Purchasing and Supply Corporation (Associated Gas and Electric system), there was a separate fee of $1\frac{1}{2}$ per cent of the aggregate expenditure for purchases.

Appliance merchandising was not customarily subject to a separate contract. Utilities Merchandising Company, an Associated Gas and Electric subsidiary, made no charge for its service but received its compensation in the margin between the gross revenue from the sale of merchandise and the cost thereof, the entire costs of selling being absorbed by the operating companies.

Legal services, when furnished by the staff of the management company, commonly involved no additional charge to the operating company. When outside legal assistance was required the operating company was, of course, billed directly. The Byllesby Engineering and Management Corporation was one organization that did collect a special fee for legal services, the amount of the fee depending on the services rendered and on the amount charged by outside firms for like services.

The fees for *financial* services were customarily in addition to the management fee and depended on a number of variables—the character of the security, the amount of the issue, the issue price, and other considerations. These fees

(d) Salaries of employees in the engineering, drafting, and expediting departments for the time they were engaged on the work.

(e) A works office and its equipment and maintenance; the salaries of a superintendent of construction, an accountant, a purchasing agent, and such assistants as were required.

(f) Any traveling expenses or expenses of a similar character, and such other expenditures as might be incurred, except for items specified as included in the fee.

(g) Fire, liability, and other insurance, and the cost of rebuilding any work destroyed or damaged.

(h) Any expenses incurred or payments made in connection with accident or injury to person or property not covered by insurance. Such expenses and payments were not included in the amount on which the fee was based.

(i) All discounts, rebates, earnings of commissary or other utilities, and similar receipts were creditable to "cost of the work." (*Utility Corporations*, No. 72-A, p. 690.)

⁷⁴ *Utility Corporations*, No. 72-A, p. 689.

were stated by the holding companies to conform to the charges customarily made by investment banking firms for similar services.⁷⁵

Certain services were customarily rendered *at per diem charges*, these charges purporting to approximate the cost of the service. The charge was usually calculated on the salaries of those assigned to the work, plus a percentage of those salaries for overhead charges, the percentage ranging from 50 to 220, plus all traveling, incidental, and other out-of-pocket expenses connected therewith. The Electric Bond and Share Company charged for per diem services at 150 per cent of the compensation paid to its auditors and accountants, and 190 per cent of the compensation paid to all other employees, for the time they were occupied. It should be noted that where the per diem charge was the only charge for the service there was a justification for charging more than the cost of salaries of the service company's employees, such additional charges being required to cover the overheads in the offices where the men were employed and to make some allowance for idle time.⁷⁶

⁷⁵ Since the financing service was an important part of the service rendered by Electric Bond and Share to its subsidiaries, the scale of fees charged by Electric Bond and Share Co. may serve as an example:

"Bonds and Other Funded Obligations Maturing 10 Years or Longer after Date of Issuance.

"Percent of principal amount of obligations so sold. (a) For the original negotiation and sale of each issue for which a new mortgage or other indenture prepared under our direction is created or to be created: On the first \$5,000,000 principal amount of the issue, one (1); on the next \$5,000,000, three-quarters ($\frac{3}{4}$); on the next \$5,000,000, five-eighths ($\frac{5}{8}$); on the next \$5,000,000, one-half ($\frac{1}{2}$); on the next \$5,000,000, three-eighths ($\frac{3}{8}$); on any excess over \$25,000,000, one-quarter ($\frac{1}{4}$).

(b) For the negotiation and sale of each additional issue under an existing mortgage or other indenture, but involving an original negotiation because of change of buyers: On the first \$5,000,000 principal amount of the issue, one-half ($\frac{1}{2}$); on the next \$5,000,000 three-eighths ($\frac{3}{8}$); on any excess over \$10,000,000, one-quarter ($\frac{1}{4}$).

(c) For the negotiation and sale of each additional issue under an existing mortgage or other indenture to the same buyers with whom we have previously negotiated sales of issues under either (a) or (b), above: On the first \$5,000,000 principal amount of the issue, three-eighths ($\frac{3}{8}$); on any excess over \$5,000,000, one-quarter ($\frac{1}{4}$).

"Nonpar Value Capital Stock

*"(a) Sales under the customer-ownership plan.—*For negotiations and sales to customers, investors, investment bankers, and others located in or adjacent to the territory served by your system, our commission shall be as follows: On the first 20,000 shares sold, \$1.25 per share; on the next 20,000 shares sold, \$1 per share; on all additional shares sold, \$0.75 per share.

"In applying the above schedule at any time, there shall be taken into consideration all of your stock (or, in case of one of your controlled companies, all of its stock) theretofore sold under the customer-ownership plan on which a fee has been paid to us (whether in the same campaign or in different campaigns), including sales made prior to the date of this contract.

*(b) Sales under other than the customer-ownership plan.—*For each original negotiation and sale to investment bankers or otherwise than under the customer-ownership plan, our commission shall be \$1 per share on the first 20,000 shares sold, \$0.75 per share on the next 20,000 shares sold and \$0.50 per share on all additional shares of the same series then or subsequently sold to the same buyers.

*(c) Exceptions.—*The commission on shares sold at less than \$80 per share will be less per share and will be fixed by agreement according to the circumstances involved in each case.

"Par Value Capital Stock

"... The minimum sale price of the original issue of par value stock is generally fixed by statute without regard to prevailing market conditions. In consequence of this fact and the constantly fluctuating difference between par value and fair market value, the terms under which we will negotiate sales of par value stock must necessarily be left open for agreement at the time of any proposed sale." (Utility Corporations, No. 72-A, pp. 677-678.)

⁷⁶ *Utility Corporations*, Nos. 23-24, p. 424

The discussion of service contracts has mentioned that many so-called "*out-of-pocket expenses*" were charged directly to the subsidiary company. The majority of contracts provided that all traveling and incidental expenses should be an additional charge on the client company. The employment of outside experts or assistance was an item typically paid directly by the operating company. Doubt has been expressed whether, particularly in the case of construction engineering performed chiefly away from the servicing company's offices, there were many expenses to be covered by the engineering and construction fee after the out-of-pocket expenses had been assessed against the subsidiary company.⁷⁷

The amount of the profits which accrued to the holding companies from their service affiliates remained a mystery until the Federal Trade Commission began its investigation in 1928. The absence of direct jurisdiction over holding companies had prevented state commissions from pursuing inquiries into the affairs of the holding companies and their non-utility affiliates.⁷⁸ In general, the holding companies sought to create the impression that the contracts with the subsidiary operating companies were primarily for the purpose of improving the earnings of the operating companies and that the fees collected were intended to approximate the costs of rendering the services.⁷⁹

In its final reports the Federal Trade Commission was able to affirm that the service contracts had been an important source of profits to the holding companies. Since the service companies operated with little or no fixed capital, the percentage of profit on the basis of invested capital would be quite meaningless; hence, these profits are usually expressed in relation to the operating costs of the service subsidiaries. The following summary figures are indicative of the relation of the fees charged to the costs of performing the work:

"It is shown by the report that the Associated Gas & Electric System in a little more than 5 years, 1924 to 1929, had net income of over 6½ millions for management and construction service alone, or 193 per cent net profit on service costs, and that in addition it had servicing income on merchandising, purchasing, and other services.

"Electric Management & Engineering Corporation, a fully owned subsidiary of National Electric Power Co., in a period of about 4½ years, 1925 to 1929, received a minimum net profit from servicing of \$2,867,000, including servicing fees received from the subsidiaries of National Public Service Corporation, or 171 per cent net on costs. This was equivalent to 32 per cent of the total amount of dividends which the holding company, National Electric Power Co., received from all its subsidiaries during this period.

"Stone & Webster Engineering Corporation of the Stone & Webster group in 4½ years (July 1, 1928, to Dec. 31, 1932) had total gross servicing income of a little over \$15,000,000, representing about 92 per cent of its total gross in-

⁷⁷ *Utility Corporations*, No. 72-A, p. 610.

⁷⁸ When it attempted to inquire into the relations of the New York State Electric & Gas Corp. with the Associated Gas & Electric Co., the New York Public Service Commission was met by a refusal to reply to questions, to furnish requested data, or to permit access to company books (even though the companies were operating utilities subject to the Commission's jurisdiction); and all of the New York subsidiaries of the Associated Gas & Electric Co. withdrew whatever applications they had pending before the Commission for the approval of security issues, et cetera. (*Re New York State Electric & Gas Corp.*, P.U.R., 1932E, 1, 5 [N.Y., 1932].)

⁷⁹ *Control of Power Companies*, p. 75, and *Utility Corporations*, No. 72-A, pp. 661-662.

come. Total net earnings of the corporation for the period, before deducting Federal income taxes, were more than \$4,600,000, or about 24 per cent on total expenses. However it distributed to certain officers and employees above their regular fixed salaries over \$1,500,000 in contingent salaries and charged the same to operating expenses.

"Byllesby Engineering & Management Corporation, servicing the Standard Gas & Electric group, had a total net income (almost wholly servicing) during the 11 years, 1919 to 1929 inclusive, of over \$17,000,000, distributing in dividends nearly \$16,000,000 to its one stockholder, Standard Gas & Electric Co. Its lowest ratio of net income to operating expenses was 51 per cent in 1928, and its highest 154 per cent in 1919.

"From 1926 to 1930, inclusive, Columbia Engineering & Management Corporation collected fees from the affiliated Columbia Gas & Electric group for engineering and management servicing amounting to nearly \$15,500,000, on which it incurred expenses of slightly over \$7,500,000, realizing a net profit on costs of servicing of 106 per cent.

"Buffalo, Niagara & Eastern Power Corporation received from its subsidiary companies over \$5,300,000 as servicing fees from July 1, 1926, to July 31, 1929. Its cost on this servicing was slightly over \$3,100,000, leaving it a net profit of about 72 per cent on cost.

"Fees for servicing received by the North American Light & Power Corporation and its successor company, from 1924 to 1929 inclusive, amounted to about \$4,600,000. For only 1 year, 1927, were the expenses for this servicing available. The fees for that year amounted to \$760,000 and the cost of rendering the services \$356,000, a net profit on cost of 113 per cent.

"Electric Bond & Share Co. had a total servicing income in 1927 of \$9,373,000 and in 1931 of \$11,248,000. Of this there was a net profit in 1927 of \$4,969,000, or 113 per cent on costs, and in 1931 \$5,701,000, or 103 per cent on costs.

"W. S. Barstow & Co., Inc. (New York), and its subsidiary, W. S. Barstow Management Association, Inc., both servicing organizations for affiliated companies, had for the 3 years and 9 months, 1924 to September 30, 1927, a combined net income (98 per cent attributable to servicing fees) of \$4,004,000, or 321 per cent on expenses. Of this total net income \$2,122,000 was distributed to 15 officers and employees as so-called 'extra compensation,' and in addition 1 of the 15 received \$653,000 under an income-sharing contract, the latter individual receiving almost one-fourth of the total net income under these two forms of extra distribution."⁸⁰

The benefits from service contracts. There is no doubt that the development of the holding company with its affiliated service organizations has been conducive to improvements in the management of utility companies. It also seems to be well substantiated that the construction work done for the operating utilities by affiliated construction companies was of good quality and well suited to the requirements of the utility. Centralized service has represented an economical development, in terms of the overall costs of providing operating companies with the services of specialists whose costs would have been prohibitive for the company of moderate or small size. The fact

⁸⁰ *Utility Corporations*, No. 72-A, pp. 662-663.

that benefits have accrued from the development of specialized service organizations may be accepted as substantiated by experience.

The incidence of the cost of the services supplied by affiliated service organizations is also reasonably clear. In the final analysis the costs of all services, whether managerial, construction, or otherwise, fall on the consumer. If the fees paid for the services are included in the operating expenses, the consumer pays these costs immediately. If the fees constitute a part of the cost of capital assets, the consumer is asked to pay a return on that capital expenditure and also to provide for the amortization of the investment through regular provisions for depreciation expense. If the commission disallows the fee either as an operating expense or as a charge to capital account, then it appears that the burden falls on the investor in proportion as the fair return is less by the amount of the disallowed item, but this loss to the investor does not mean that the incidence of the expenditure is not also on the consumer. If the fair return, after the disallowance of improper items, is less than the sum ordinarily required to attract capital to the enterprise the ultimate consequence will be an increase in the cost of capital to the company, and that increase in cost results whether the insufficiency in revenue is the product of mismanagement, harsh regulation, or some other risk. The ultimate incidence of all utility expenditures is on the consumer of the utility service.

What has been the incidence of the benefits which result from centralized servicing? This is more difficult to answer, for the results differed, at least quantitatively, from company to company. There is no doubt that the holding company that controlled the stock of the operating subsidiary was one of the principal beneficiaries. Indeed, the holding company would be a substantial beneficiary even if the services were rendered without a profit, since any improvement in the earnings on the common stocks of the operating utilities would increase the investment income of the holding company. But the holding company ordinarily derived additional, and more immediate, benefits in the form of the large profits which were earned by its service affiliates.

Whether any benefits accrued to consumers from the servicing organizations is difficult to ascertain in the particular instance. Certainly in some holding-company systems the fees paid by the operating companies were less than the value of the services which they received, and it may be assumed that there was a net benefit to consumers. In other holding companies it seems reasonably clear that the consumer paid higher prices for utility services as a result of the excessive fees which were charged by affiliated service companies.

The inquiry of the Federal Trade Commission and the investigations of the various state commissions have repeatedly raised the question why the holding company should be permitted to benefit from its control over operating utilities, other than as a holder of investments in the operating companies. In other words, why should the holding company be permitted to take strategic or monopoly profits from its subsidiaries? Even before there was mandatory pressure from regulatory authorities,⁸¹ certain holding companies had placed

⁸¹ In its decision in *Smith v. Illinois Bell Tel. Co.*, 282 U.S. 133 (1930), the Supreme Court had stated that the cost to the affiliated company was relevant in judging the reasonableness of intercompany payments on account of services or purchases.

their service contracts on a *cost* basis. In May, 1930, the Commonwealth and Southern Corporation adopted the service-at-cost plan.⁸² Before its inquiry was completed the Federal Trade Commission was able to report that a number of other companies had taken similar steps.⁸³ Where the service contracts are on a cost basis and where the service affiliates are efficiently conducted, there is no doubt that the consumers benefit from the centralization of the managerial, engineering, and other functions. And, as was noted above, the holding company benefits too, in its capacity as the holder of the common stock and other securities of the operating utility.

INCOME AND EXPENSES OF HOLDING COMPANIES. *The sources of holding-company income.* If their activities were confined to holding the securities of operating companies, holding companies would have two sources of income: interest and dividends on the securities of the subsidiary companies, and profits from sales of investment securities. Most holding companies, however, have also earned income directly or indirectly from the fees charged to subsidiary companies by various service companies. And finally, the financial reports of holding companies showed what purported to be income as a result of various accounting manipulations which will be mentioned subsequently. Table 28 presents a summary of the sources of income for certain holding companies; both the amounts of income from different sources and the percentages are reported.

Practically all of the income of the holding companies was derived from subsidiary companies over which they exercised control. In a few instances some income may have arisen from services performed for companies outside the system. The profits that were derived from the sale of investment securities might also represent a source of outside income. The proportion of income which the holding company derived from different sources is a significant index of the relations that prevailed between the holding company and its operating subsidiaries. The tabulation attempts to make the important distinction between that income which was actually realized and that which was unrealized, a distinction of great significance in appraising the policy followed by the holding companies in administering their income and paying dividends.

(1) *Cash dividends.* The receipt of cash dividends should be the normal method by which a holding company benefits from its investments in subsidiaries. The importance of the cash dividends varied markedly from one holding-company system to another. Some holding companies—United Gas Improvement Company, Niagara Hudson Power Corporation, and Columbia Gas and Electric Corporation—received more than 80 per cent of their income as cash dividends. Other holding companies derived a surprisingly small proportion of their income as cash dividends. At the time that the table was prepared the Cities Service Company had received only 4.9 per cent of its income as cash dividends, but subsequently some of its unrealized income was realized. The Central Public Service Corporation was another whose dividend

⁸² *Moody's Public Utilities*, 1930, p. 1557.

⁸³ Columbia Engineering and Management Corp. (pp. 640-641), Buffalo, Niagara & Eastern Power Corp. (pp. 647-648), Southeastern Power & Light Co. (pp. 641-643), North American Co., general-management service (pp. 648-649). (*Utility Corporations*, No. 72-A.)

income was small, for reasons to be shortly mentioned. The Electric Bond and Share Company's small proportion of cash dividends, 14.4 per cent, reflects the fact that its holdings of the securities of its subsidiary companies were relatively small and its earnings from servicing contracts relatively large. A comment is also necessary with respect to the cash dividends shown by Associated Gas and Electric Corporation, 76.5 per cent of its total income; \$29,793,398 of the dividends in a total of \$69,600,835 were charged by the subsidiaries to capital surplus account and, therefore, should not have been recorded as income.⁸⁴

The importance of the source from which cash dividends were paid was often overlooked by holding companies, with consequent serious mistakes in the administration of income. Cash dividends should be paid from net earnings only, and when the cash dividend is paid from the accumulated earned surplus, it is important for that fact to be known to the stockholder, who may have to regard a part of the payment as a return of his investment if he purchased the stock at a premium. A common and grave error was the payment of dividends from capital surplus or paid-in surplus which had been created through crediting sums received from the sale of securities to surplus instead of to the capital-stock account. The payment of dividends from capital surplus is obviously a return of capital.

The payment of unearned dividends was one of the causes for the failure of certain holding companies. The W. B. Foshay Company paid dividends of \$1,104,995 from January 1, 1920, to October 31, 1929, its books showing a total net income of \$1,692,277 during this period; but \$1,501,689 of this "net income" represented inflation of securities which it owned and \$441,992 was unrealized profit on the sale of properties to subsidiaries; instead of a net income of \$1,692,277, the company had sustained a loss of \$251,414.⁸⁵ The Central Public Service Corporation (controlled by Albert E. Pierce and Company) paid dividends totaling \$15,420,184 (\$7,029,019 in cash and \$8,391,165 in capital stock), from January 1, 1924, to December 31, 1931; its books showed gross income of \$22,361,364; operating expenses and interest, taxes, and other fixed charges should have absorbed \$14,747,430, leaving an apparent net income of \$7,613,934; but of the total gross revenues, only \$14,059,284 were actually realized income, and the expenses and fixed charges exceeded this realized income by \$688,146.⁸⁶ As a third horrible example of what should not be done, Insull Utility Investments, Inc., charged against surplus for dividend payments the sum of \$17,669,732 from January 1, 1929, to April 16, 1932, when the company went into receivership, at the same time showing a net income on its books of \$31,492,550; however, the income actually received amounted to approximately \$12,400,000, and the general expenses and interest expense came to approximately \$14,400,000.⁸⁷ The seriousness of such dividend practices requires no emphasis.

(2) *Interest income.* Interest has been a significant item of income for some

⁸⁴ *Utility Corporations*, No. 72-A, p. 441.

⁸⁵ In the federal district court, the financial conduct of the Foshay company was branded as dishonest and fraudulent, and two of the responsible officers were sent to jail. (*Utility Corporations*, No. 72-A, pp. 445-446.)

⁸⁶ *Utility Corporations*, No. 72-A, pp. 446-447.

⁸⁷ *Utility Corporations*, No. 72-A, p. 447.

TABLE

SOURCES OF INCOME OF CERTAIN HOLDING
(000 omitted)

	<i>Electric Bond & Share Co.</i>	<i>American Power & Light Co.</i>	<i>American Gas & Electric Co.</i>
Period covered (7 years where figures were available). Reference to report on <i>Utility Corporations</i>	7 years, 1922-28 (Vol. 23-24, p. 663)	7 years, 1921-27 (Vol. 23-24, p. 998)	7 years, 1922-28 (Vol. 21-22, p. 895)
AMOUNT OF INCOME			
<i>Realized on investments</i>			
Cash dividends	\$14,989	\$27,966	\$53,537
Interest	14,050	11,305	14,793
Total realized on investments	29,039	39,271	68,330
<i>Unrealized on investments ¹</i>			
Stock dividends ²	8,292	.....	.....
Undistributed earnings .....	.....	.....	.....
Total unrealized on investments ¹	8,292	.....	.....
<i>Other income (partly unrealized ³)</i>			
Servicing fees, etc.	41,287	1,685	12,363
Sales of investment securities, etc.	13,512	525	.....
Underwriting and financing	10,079	328	.....
Syndicate participation .....	.....	.....	.....
Handling Federal income-tax payments ..	.....	.....	.....
Miscellaneous	2,217	1,332	1,126
Total other income (partly unreal- ized ³)	67,095	3,870	13,489
Total income	104,426	43,141	81,819
PER CENT OF INCOME			
<i>Realized on investments</i>			
Cash dividends	Per cent 14.4	Per cent 64.8	Per cent 65.4
Interest	13.4	26.2	18.1
Total realized on investments	27.8	91.0	83.5
<i>Unrealized on investments ¹</i>			
Stock dividends	7.9	.....	.....
Undistributed earnings .....	.....	.....	.....
Total unrealized on investments ¹	7.9	.....	.....
<i>Other income (partly unrealized ³)</i>			
Servicing fees, etc.	39.6	3.9	15.1
Sale of investment securities, etc.	12.9	1.2	.....
Underwriting and financing	9.7	0.8	.....
Syndicate participation .....	.....	.....	.....
Handling Federal income-tax payments ..	.....	.....	.....
Miscellaneous	2.1	3.1	1.4
Total other income (partly unreal- ized ³)	64.3	9.0	16.5
Total income	100.0	100.0	100.0

¹ This unrealized income on investments in subsidiaries was not realized because the subsidiaries retained their earnings. Considered from a consolidated basis, a part of this income may properly appear as realized income of the holding company and subsidiaries.

COMPANIES—AMOUNTS AND PERCENTAGES *

(000 omitted)

<i>New England Power Association</i>	<i>The North American Co.</i>	<i>North American Light & Power Co.</i>	<i>Central Public Service Corp.</i>	<i>Cities Service Co.</i>
4 Years, 1926-29 (Vol. 31-32, p. 715)	7 years, 1923-29 (Vol. 33-34, p. 832)	7 years, 1923-29 (Vol. 39, p. 498)	7 years, 1925-31 (Vol. 53, p. 957)	7 years, 1924-30
\$15,360 3,068	\$61,252 11,036	\$13,118 1,905	\$3,473 6,068	\$13,076 39,546
18,428	72,288	15,023	9,541	52,622
.....
.....	.....	.....	8,302	⁴ 181,111
.....	.....	.....	8,302	⁴ 181,111
1,640	2,088	4,638	4,225	21,256
.....	134	383	.....	9,415
.....	42	.....	.....	.....
.....	988	.....	.....	.....
.....	1,275	.....	.....	.....
1,642	1,980	1,064	207	371
3,282	6,507	6,085	4,432	31,042
21,710	78,795	21,108	22,275	264,775
<i>Per cent</i> 70.8 14.1	<i>Per cent</i> 77.7 14.0	<i>Per cent</i> 62.2 9.0	<i>Per cent</i> 15.6 27.2	<i>Per cent</i> 4.9 15.0
84.9	91.7	71.2	42.8	19.9
.....
.....	.....	.....	37.3	⁴ 68.4
.....	.....	.....	37.3	⁴ 68.4
7.5	2.6	22.0	19.0	8.0
.....	.2	1.8	.....	3.6
.....	.1	.....	.....	.....
.....	1.3	.....	.....	.....
.....	1.6	.....	.....	.....
7.6	2.5	5.0	.9	.1
15.1	8.3	28.8	19.9	11.7
100.0	100.0	100.0	100.0	100.0

* Source: *Utility Corporations*, No. 72-A, pp. 423-426.² Unrealized income when recorded. Subsequent realization by sales of stock received as dividends was undetermined.

TABLE 28

SOURCES OF INCOME OF CERTAIN HOLDING

(000 omitted)

	<i>Columbia Gas & Electric Corp.</i>	<i>Niagara Hudson Power Corp.</i>	<i>The United Gas Improvement Co.</i>
Period covered (7 years where figures were available).	4 years, 1927-30	3 years, 1930-32	7 years, 1924-30
Reference to report on <i>Utility Corporations</i>	(Vol. 47, p. 825)	(Vol. 72, pp. 271-274)	(Vol. 51, p. 648)
AMOUNT OF INCOME			
<i>Realized on investments</i>			
Cash dividends	\$105,172	\$30,674	\$121,132
Interest	16,857	6,226	5,985
Total realized on investments	122,029	36,900	127,117
<i>Unrealized on investments</i> ¹			
Stock dividends ² .....	.....	.....	² 408
Undistributed earnings .....	.....	.....	.....
Total unrealized on investments ¹ .....	.....	.....	² 408
<i>Other income (partly unrealized</i> ³)			
Servicing fees, etc. ....	.....	.....	7,195
Sales of investment securities, etc. ....	.....	8	.....
Underwriting and financing .....	.....	.....	.....
Syndicate participation .....	.....	.....	.....
Handling Federal income-tax payments ..	.....	.....	.....
Miscellaneous	5,964	.....	2,417
Total other income (partly unrealized ³)	5,964	8	9,612
Total income	127,993	36,908	137,137
PER CENT OF INCOME			
<i>Realized on investments</i>			
Cash dividends	<i>Per cent</i> 82.2	<i>Per cent</i> 83.1	<i>Per cent</i> 88.3
Interest	13.2	16.9	4.4
Total realized on investments	95.4	100.0	92.7
<i>Unrealized on investments</i> ¹			
Stock dividends .....	.....	.....	² .3
Undistributed earnings .....	.....	.....	.....
Total unrealized on investments ¹ .....	.....	.....	² .3
<i>Other income (partly unrealized</i> ³)			
Servicing fees, etc. ....	.....	.....	5.2
Sale of investment securities, etc. ....	.....	0	.....
Underwriting and financing .....	.....	.....	.....
Syndicate participation .....	.....	.....	.....
Handling Federal income-tax payments ..	.....	.....	.....
Miscellaneous	4.6	.....	1.8
Total other income (partly unrealized ³)	4.6	0	7.0
Total income	100.0	100.0	100.0

³ Certain holding companies did not realize all the income which was recorded as income, such as gains from intercompany sales of securities and other gains recorded from appreciation of securities.

⁴ Of this amount \$69,124,000, or slightly over one-third, was realized through distribution by the subsidiaries, prior to Dec. 31, 1930, at which date \$112,803,000 was unrealized.

(Continued)

COMPANIES—AMOUNTS AND PERCENTAGES

(000 omitted)

<i>Associated Gas & Electric Co.</i>	<i>Middle West Utilities Co.</i>	<i>National Electric Power Co.</i>	<i>Midland United Co.</i>	<i>Standard Gas & Electric Co.</i>
7 years, 1923-29 (Vol. 45, p. 1588)	7 years, 1923-29 (Vol. 38, p. 607)	4 years, 1926-29 (Vol. 40, p. 366)	3 years, 1929-31 (Vol. 60, p. 387)	7 years, 1923-29 (Vol. 36, p. 568)
\$69,601	\$38,825	\$8,408	\$8,322	\$52,790
13,064	8,915	.....	2,379	10,591
82,665	47,740	8,408	10,701	63,381
.....	² 2,434	.....	.....	.....
3,491	.....	.....	.....	.....
3,491	² 2,434	.....	.....	.....
1,641	1,990	.....	606	.....
20	20,444	5,012	610	6,256
175	.....	120	.....	.....
.....	.....	.....	.....	401
2,938	.....	.....	.....	.....
.....	313	512	370	.....
4,774	22,747	5,644	1,586	6,657
90,930	72,921	14,052	12,287	70,038
<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>	<i>Per cent</i>
76.5	53.3	59.8	67.7	75.4
14.4	12.2	.....	19.4	15.1
90.9	65.5	59.8	87.1	90.5
.....	² 3.3	.....	.....	.....
3.8	.....	.....	.....	.....
3.8	² 3.3	.....	.....	.....
1.8	2.8	.....	4.9	.....
0	28.0	35.7	5.0	8.9
.2	.....	.9	.....	.....
.....	.....	.....	.....	.6
3.3	.....	.....	.....	.....
.....	.4	3.6	3.0	.....
5.3	31.2	40.2	12.9	9.5
100.0	100.0	100.0	100.0	100.0

⁶ Certain holding companies did not realize all the income which was recorded as income, such as gains from intercompany sales of securities and other gains recorded from appreciation of surplus.

holding companies, but for others it has been of little importance. Such income has been derived from loans to subsidiaries, from investments in interest-bearing securities, from call loans and bank deposits, and from other sources. By far the larger proportion has come from loans to subsidiaries, sometimes on open account and sometimes on a note. Some holding companies borrowed from any operating company with an excess of cash funds and reloaned to other subsidiary companies; some holding companies paid the same rate of interest as was received on loans to subsidiary companies, and others loaned at a higher rate of interest than they paid.

Intercompany loans may be a very convenient form of financing for the operating company. Funds are secured promptly and without red tape. The necessity of seeking commission approval for an issue of securities is postponed, sometimes until after the capital expenditures have been completed. The company is able to select a time for issuing securities when the conditions of the investment market are favorable.

Intercompany loans may be abused. The holding company may treat the intercompany loans as a source of income to itself without regard to the subsidiary's need for funds. The interest charge to the operating company may be above the rate at which it could obtain funds on its own credit.

(3) *Stock dividends.* Stock dividends, as declared by utility holding companies, have customarily been paid in common stock. A common-stock dividend may be defined as a distribution of common stock, the common-stock account being increased and the earned-surplus account being correspondingly reduced.⁸⁸

The source from which stock dividends are paid requires careful investigation. These dividends should be paid only from earned surplus. In the past, stock dividends have been paid from surpluses resulting from write-ups of capital accounts, from unrealized intercompany profits, and from the capitalization of arbitrary overheads and intangibles. Such accounting practices deceive the stockholder as to the true earnings of the company, and the payment of stock dividends on the basis of such a fictitious surplus only furthers the deception.

Utility companies have followed two policies with respect to stock dividends. The more usual policy has been the declaration of an occasional stock dividend, signifying that a certain proportion of the earned surplus of the corporation has been permanently retained in the business. If the corporation has been successful so that an earned surplus has accumulated, and if the expansion of the corporation's business has justified further investment, the reinvestment of earnings has enabled the management to carry out a policy of expansion without the necessity of an appeal to the investment market for funds, and, in the case of utilities located in the more progressive states, without the necessity of securing the commission's approval for the new capital in-

⁸⁸ This definition serves to distinguish the stock-split in which the common-stock account is not changed, a greater number of shares having the same valuation on the balance sheet as the smaller number of shares had before the split-up. The distribution of stock on the basis of capital surplus should not be regarded as a stock dividend; the corporation simply reclassifies the capital accounts in which the sums paid by investors are recorded.

vestments. Much more dubious is the second policy, that of declaring a periodic stock dividend, in addition to, or in lieu of, a cash dividend.

While the reinvestment of earnings and the payment of stock dividends may have an appeal for the management of a corporation which can profitably make further investments and wishes to avoid an appeal to the investment market, the stock dividend has little justification from the point of view of the stockholder. Both from the viewpoint of public policy and in order that the stockholder's judgment may be recorded, it is desirable that the corporation be under the necessity of submitting its request for any substantial increase in capital to the disinterested judgment of the investment market; only by competing in the open market for investment funds is there any assurance that the management is not expanding its enterprise when the interests of the whole economy would be better served by investments in another direction. A final count against the stock dividend, again from the viewpoint of both the investor and of general public policy, is the fact that the stock dividend lends itself to manipulation and deception.

The accounting for stock dividends is important for the issuing corporation and for the recipient. The amount of the stock dividend should be added to the capital-stock account and deducted from the earned surplus account. If the stock dividend is in excess of the earnings of the current period, that fact should be made plain to the recipients. The recipient should not record the stock dividend as income, for several reasons: the book value or equity of total common stock of the distributing company is not changed; the book value of the total number of shares held by the recipient is likewise unchanged; and the recipient cannot realize a cash income without selling some of his shares, and in selling he diminishes his equity proportionally.⁸⁹ Holding companies have followed different practices in recording the stock dividends which they have received: the Electric Bond and Share Company generally recorded such dividends at the same value as the credit to the common-stock

⁸⁹ The following example will illustrate the differing results of cash and stock dividends. For simplicity it is assumed that the market value of the stock is equal to its book value.

(1) Company A:

(a) Before dividend declaration:

Capital stock (100,000 shares)	\$10,000,000.00
Earned surplus:	
At beginning of year	2,000,000.00
For year	1,000,000.00
Total equity of capital stock at end of year	13,000,000.00
Value of stock per share at end of year	130.00

(b) After cash dividend declared of 5 per cent:

Capital stock (100,000 shares)	10,000,000.00
Earned surplus after cash dividend	2,500,000.00
Total equity of capital stock	12,500,000.00
Value of stock per share	125.00

(c) After stock dividend declared of 5 per cent:

Capital stock (105,000 shares)	10,500,000.00
Earned surplus after stock dividends	2,500,000.00
Total equity of capital stock	13,000,000.00
Value of stock per share	123.81

[Footnote continued on page 136.]

account of the issuing company;⁹⁰ Middle West Utilities Company and Insull Investments, Inc., recorded stock dividends as income at the market price on the date received; the United Gas Improvement Company did not record its stock dividends as income and assigned no value to them.⁹¹ The method followed by the United Gas Improvement Company is clearly preferable, since the other methods make possible an erroneous interpretation of the financial condition if it is not understood that the stock dividends are "unrealized" as income.

(4) *Undistributed earnings of subsidiaries.* One reprehensible practice of utility holding companies was that of recording as income the earnings of subsidiaries, although the subsidiaries had not declared any dividend or set up any book obligation to make any payment to the holding company. Fortunately, the practice was not used by all holding-company groups. With the exception of the Cities Service Company, the earnings taken up were after provision for operating expenses, depreciation, bond interest and expense, and preferred dividends. The general procedure was to establish an asset account—"investments in common stocks of subsidiaries" or "earnings receivable"—and record a corresponding credit to income or earned surplus.

There are at least three serious objections to recording the undistributed earnings of subsidiaries as holding-company income. First, it overstates the assets and surplus of the holding company, recording as an asset an item over which the holding company may never have legal ownership. The practice permits both the operating companies and the holding company to present a stronger financial appearance, and may deceive investors and creditors. With pyramiding, the same earnings may be simultaneously included in the income

[Footnote 89 (continued)]

(2) Stockholder X:

(a) Before dividend declaration:

X owns 100 shares:	
Par value	10,000.00
Surplus	3,000.00
Equity	13,000.00
Value per share	130.00

(b) After cash dividend declared of 5 per cent:

X owns 100 shares:	
Par value	10,000.00
Surplus	2,500.00
Equity	12,500.00
Income	500.00
He continues to hold 1/1000 of the equity, value per share	125.00

(c) After stock dividends declared of 5 per cent:

X owns 105 shares:	
Par value	10,500.00
Surplus	2,500.00
Total	13,000.00
Value per share	123.81

(Utility Corporations, No. 72-A, p. 454.)

⁹⁰ The 1931 income statement carried a footnote indicating the earnings per share if the stock dividends had been recorded at no value and if they had been recorded at market value.

⁹¹ *Utility Corporations*, No. 72-A, pp. 455-457.

statements and balance sheets of several corporations.⁹² Secondly, the practice of taking up undistributed earnings permits the payment of dividends by holding companies when it is inexpedient or undesirable for the subsidiary companies to declare and pay cash dividends to the holding companies.⁹³ Thirdly, the taking up of undistributed earnings of subsidiaries has been used to permit the holding company to circumvent the restrictions of bond indentures.⁹⁴

(5) *Management, supervision, and other servicing fees.* Income in the form of management, supervision, and other servicing fees may be received by the holding company directly from the subsidiary companies, as in the case of the Electric Bond and Share Company, or indirectly in the form of dividends from affiliated servicing companies, as in the Associated Gas and Electric group. The importance of servicing fees has differed in the various holding-company systems. According to Table 28, the Electric Bond and Share Company derived over 39 per cent of its income from this source, while the Niagara Hudson Power Corporation and the Columbia Gas and Electric Corporation received no income in this form. In most holding-company systems, the servicing fees were a significant, though relatively small, source of revenue.

(6) *Profits from the sale of investment securities.* Some holding-company systems recorded large profits from the sale of investment securities. In Table 28 it appears that the Middle West Utilities derived 28.0 per cent of its income from this source, the National Electric Power Company 35.7 per cent, the Electric Bond and Share Company 12.9 per cent, and the Standard Gas and Electric Company 8.9 per cent. This "income" should be regarded with critical skepticism. The investment securities sold were commonly those of subsidiary companies, and the purchaser was ordinarily another subsidiary or

⁹² The Arkansas Natural Gas Corp., a sub-holding company of Cities Service Co., illustrates this result. "On December 31, 1930, the Arkansas company reported a surplus of \$5,980,246. Of this amount \$5,081,213 was created by taking up undistributed earnings of subsidiaries. Coincident with the taking up of undistributed earnings of subsidiaries by the Arkansas company, Cities Service Co. took up the undistributed earnings of its subsidiary or Arkansas Natural Gas Corporation. The situation on December 31, 1930, therefore, was [that] the subsidiaries reported a corporate surplus of \$5,081,213, the Arkansas company reported a corporate surplus of \$5,980,246, and of Cities Service Co.'s corporate surplus \$5,980,246 represented uncollected and undistributed earnings of the Arkansas company. The combined surpluses reported by the three corporate entities were \$17,041,706; however, if the surpluses were consolidated rather than combined, then \$11,061,460 must be eliminated, due to duplication, leaving a consolidated surplus of \$5,980,246." (*Utility Corporations*, No. 72-A, p. 470.)

⁹³ Thus during the period 1922 to 1929, the Associated Gas and Electric Company took up as income at least \$15,839,000 of undistributed earnings; that virtually all of these earnings were paid out in dividends is indicated by the fact that the balance of the surplus account on December 31, 1929, was only \$1,886,033. (*Utility Corporations*, No. 72-A, p. 469.)

⁹⁴ A bond indenture of the Cities Service Power & Light Co. provided that no dividends, other than stock dividends, should be paid out of the dividends received from subsidiaries if the combined provision for depreciation of the subsidiaries was less than \$13,957,000. The net earnings of the subsidiaries, after deduction from the depreciation provision, would not have permitted the payment of a cash dividend by the holding company. The holding company, however, took up the undistributed earnings of the subsidiaries, before any deduction for provision for depreciation; and the holding company set up as a depreciation reserve a smaller amount than that set up by the subsidiaries. The payment of dividends by the Cities Service Power & Light Co. under these circumstances amounted to their payment out of depreciation reserve. (*Utility Corporations*, No. 72-A, p. 472.)

affiliated company. The write-ups that accompanied such intercompany transactions have already been remarked. The same interests were on both sides of the transaction; the price was whatever the exigencies of the moment required; the profits were unrealized and largely fictitious. In the unusual transaction, where investments were sold to outside interests, there might be a realized profit, as when the United Gas Improvement Company disposed of its stock in General Gas and Electric Corporation.⁹⁵

(7) *Commissions on financing and underwriting.* Sometimes the holding company purchased the securities of the subsidiary companies and arranged for their ultimate sale to investors; at other times the holding company negotiated with investment bankers for the underwriting and sale of the subsidiaries' securities. The holding company, in the first situation, usually received a payment intended to cover the entire costs of disposing of the securities and an additional element of profit; in the second, the holding company commonly received a financing commission and in addition might have a further sum arising from its organization of, or participation in, the underwriting and sale of the security. In some instances these payments to the holding company were little more than a tax or toll which the holding company was able to collect because of its control over the subsidiary; this would be true where the operating subsidiary might have negotiated the placement of its own securities without the intervention of the holding company. According to Table 28, the Electric Bond and Share Company was the only company showing substantial income, 9.7 per cent, from this source, but in other holding companies such profits often accrued through a financing affiliate.

(8) *Income from syndicate participation.* Income received from participation in syndicates was only an occasional source of revenue for holding companies. The North American Company and the Standard Gas and Electric Company were reported to have moderate incomes from such operations.

(9) *Income from handling federal income-tax payments.* This income arose from some holding companies' practice of collecting from the operating subsidiaries their estimated liability for the federal income tax on the basis of their individual incomes; and the holding company then filed a consolidated return for the entire system. The tax obligation of the holding-company system on a consolidated basis was often less than the aggregate of the sums which had been collected from subsidiaries, and the excess was treated as income by some holding companies. From 1923 to 1929, this practice accounted for 3.3 per cent of the total income of the Associated Gas and Electric Company, and for 1.6 per cent of the income of the North American Company. From 1926 to 1929, Associated Gas and Electric Company collected \$2,938,513.12 for income taxes and paid no federal income tax whatever. And from 1922 to 1930, the Cities Service Company collected \$11,611,601.25 for income taxes from its subsidiaries, and on a consolidated basis paid income taxes of \$1,745,220.98, a gain of \$9,866,380.37 for the holding company.⁹⁶

The creation of income out of tax management has been condemned as a

⁹⁵ It is significant that the United Gas Improvement Co. added its profit of \$9,307,540 directly to surplus and did not consider it as current earnings.

⁹⁶ *Utility Corporations*, No. 72-A, pp. 478-479.

dubious practice: there was no justification for the holding company's absorption of the benefits of the payment of taxes on a consolidated basis; a proper treatment of federal income taxes would have prorated the saving from the consolidated return among the subsidiaries. The practice resulted in an overstatement of the true tax responsibility of the operating utilities and a corresponding understatement of their net income available as a fair return.

(10) *Miscellaneous income.* Some miscellaneous income arose from non-utility operations, such as advice on insurance matters, the preparation of property surveys, and other like activities. These items are of little significance.

Expenses. The expenses which a holding company sustains depends upon the nature of its operations. Where it renders no management services, the holding company has only expenses incidental to maintaining the corporate organization, administering its investments, and distributing the earnings. The expenses of a holding company supplying management and other services to its subsidiaries will vary with the character of those services. Table 29 indicates that the ratio of total expenses to gross income for holding companies furnishing some services varied from 6.4 per cent for the North American Company to 28.6 per cent for the Electric Bond and Share Company. The low ratios for the Standard Gas and Electric Company and the Associated Gas and Electric Company reflect the fact that subsidiary servicing companies performed the services in those groups.

TABLE 29

GROSS INCOME AND OPERATING EXPENSES OF CERTAIN HOLDING COMPANIES WITH RATIOS OF EXPENSES TO INCOME, FOR DESIGNATED YEARS *

<i>Company</i>	<i>Based on year</i>	<i>Gross income</i>	<i>Operating expenses</i>	<i>Ratio expenses to income (Percent)</i>
Electric Bond & Share Co.	1931	\$23,962,762	\$6,856,599	28.6
North American Light & Power Co.	1929	6,672,794	1,429,049	21.4
New England Power Association ...	1929	8,334,550	1,047,628	12.5
United Gas Improvement Co.	1930	36,017,418	3,396,825	9.4
American Gas & Electric Co.	1928	18,874,710	1,692,037	8.9
Middle West Utilities Co.	1929	18,595,689	1,501,257	8.1
The North American Co.	1929	20,162,384	1,291,602	6.4
Standard Gas & Electric Co.	1929	14,164,646	188,721	1.4
Associated Gas & Electric Co.	1928	15,914,510	147,004	.9

* *Utility Corporations*, No. 72-A, p. 484.

JUDGMENT REGARDING THE PUBLIC UTILITY HOLDING COMPANY. In formulating a judgment with respect to the public utility holding companies and their conduct, it will be convenient to consider their alleged advantages from three points of view—that of management and control, that of operating companies and the consumer, and that of investment and the investing public—and the alleged disadvantages also from three points of view—that of operating com-

panies and the consumer, that of the investing public, and that of regulation and public control. Some holding-company practices are significant from all six points of view.

Advantages to the management and control. The holding company presented many advantages to the management and to those in control of utility systems, and entailed no disadvantages, unless the fact that some managements were tempted to overreach themselves and ended in bankruptcy is so regarded. These advantages can be summarily described under nine headings.

(1) The adaptability of the corporate form of organization. The use of the corporate form of organization rendered the erection of holding-company systems extremely simple. The holding-company system was thus afforded permanence in organization. The system also possessed extreme flexibility, permitting the separation of parts of the system by the simple expedient of disposing of the controlling stock interest in the unit to be divorced. Different functions could be organized into separate corporate entities, permitting any desired arrangement of legal responsibility, limiting and isolating liability for losses, securing advantageous financing of subsidiaries, et cetera.

(2) Formal compliance with state laws. The use of the holding company permitted the combination of many properties within the same system, despite state laws which required that only domestic corporations should carry on public utility operations within the state. Where particular subsidiaries possessed valuable franchise privileges, their acquisition was possible without disturbing the continuity of the subsidiary corporation. Related activities that were not permitted to utility corporations have been carried on through separately incorporated units. It permitted operating units to comply with the more stringent requirements of the statutes of some states without the holding company, or other units of the system, having to submit themselves to that more stringent jurisdiction.

(3) Capitalization of controlling stock interests. A most significant advantage for the controlling group has been the possibility of reducing their investment in subsidiaries, without any loss of control, through the incorporation of intermediate holding companies. Through the pyramiding device, holding-company systems have quite literally been built with "other peoples' money."

(4) Pyramiding of earnings. The pyramiding of earnings supplied one of the strongest incentives to the establishment of holding-company systems; it provided a rate of earnings which could either be enjoyed from one year to another or secured all at once through a recapitalization of the system on the basis of its established earnings.

(5) Speculative profits. Speculative profits were made on the acquisition of properties and their resale to the holding company. Speculative profits were also realized on the introduction of intermediate holding companies, that is, through the process of "capitalizing the controlling stock interest."

(6) Profits arising from improvements in operations. The management of the holding company, through its control of the operating properties, was in a position to achieve increased efficiency in management through a centralization of managerial functions in especially qualified executives. There were

economies to be realized in the use of materials and equipment; if certain units of equipment proved inadequate for one operating company, it was not necessary that they be retired at a loss if they could be used by another operating subsidiary. Similarly, the holding company was in a position to assure expert engineering and supervision in the construction of new works. All of these improvements in operations reduced costs and yielded larger profits, which accrued to the holding company either in the form of larger earnings on its investment, or perhaps, in the form of fees paid by the operating companies to various service organizations controlled directly by the holding company.

(7) Tax profits. Another source of gain to the top-holding company arose from the practice of paying federal income taxes on the basis of a consolidated return, and collecting from the individual subsidiary companies the estimated tax payments which each would have to make on the basis of an individual return.

(8) Tempering the rigors of rate regulation. Among the natural-gas utilities particularly, the holding-company device proved advantageous in shifting the profits from the local distributing companies, subject to state regulation with respect to rates, to the pipeline and producing companies that were beyond the jurisdiction of the state commissions. This practice seems not to have been used by the electric-holding-company systems.

(9) Remunerative employment. In many of the holding-company systems the final control was lodged in the officers and directors of the system. The building of the holding-company structure provided highly remunerative employment for those who exercised control.

Advantages to the operating companies and their consumers. The advantages accruing to operating companies and consumers from the activities of the holding companies are not capable of objective measurement. The extent of the advantages seemingly depended on the size and location of the utility, and on the costs which the holding company imposed on the operating company in return for the services afforded. The advantages are usually described in terms of improved services, lower rates, and increased utilization of service. There is no doubt that the better-managed holding companies did produce important gains in all three respects, though a part of the gains during the past quarter of a century, when holding companies were most active, must be attributed to the general development of the industry rather than to the particular efforts of the holding companies. The advent of the holding company was least significant with respect to the large utilities serving large centers of population, and most important for the small local plants, especially if the latter were located outside of the eastern section of the country. The advantages credited to the holding company may be further discussed in terms of gains in operating efficiency, managerial improvements, financing, and improvements in service.

(1) Gains in operating efficiency. The holding companies were able to effect a combination of small plants, either into single large operating units, or into a closely integrated system. The growth of the holding-company system facilitated interconnections, not only between plants within the same system,

but also between plants under the control of different systems. Such interconnections increased reliability of service and reduced the reserve capacity which each plant required. However, these advantages from interconnection could be secured by contractual arrangements between independent operating units, as has been demonstrated by the Connecticut Valley Power Exchange organized by the Hartford Electric Light Company, the Connecticut Light and Power Company, and the Turners Falls Power and Electric Company.⁹⁷ The holding-company organization also offered a method of securing the benefits resulting from joint operation when the separate companies could not be combined into a single operating unit, for example, where the prohibitions of state statutes, the costs of retiring outstanding securities, the desire to preserve favorable franchises, or the like, made any outright merger impossible or inexpedient.

(2) Improvements in management. At the time when holding-company organizations were dominant in the electric and gas industries, marked improvements occurred in the technical and financial management of many operating utilities.

(3) Improvements in service. Technically, the service was improved in dependability, in voltage regulation, and in adaptability to the developing demands of consumers. The service was made more widely available beyond the larger centers of population. The development of holding-company control was accompanied by an aggressive program of expansion through the promotion of increased consumption by lower rates, the promotion of new uses, and the extension of the service into new areas. If any criticism should be offered with respect to this program it would be that utility managements concentrated their attention too largely on the so-called "competitive demand," that is, the larger commercial and industrial users, and tended to assume that the small user was not a profitable channel for promoting increased consumption.

Advantages relative to investment and the investing public. The public utility industry has occupied a favored position with respect to the investment character of its securities: it has normally been protected against competition; it has a constitutional right to earn a nonconfiscatory return; the steady growth of the industry has caused regulatory authorities to be sensitive to the investment position of utilities and to establish rates with a view to the attraction of new capital; and the demand for the utility service has generally been stable and predictable. Despite the favorable financial status of operating utilities, the holding company promoted more adequate investment of capital and, it was said, added elements of security to the investor's position.

(1) More adequate financing. The better-managed holding companies were distinctly successful in promoting more adequate financing of operating companies. In part, this gain was accomplished through organizing larger operating units, reorganizing their capitalization to create a balanced capital structure, and aiding in the sale of their securities to the investing public. And in part the improvement resulted from the ability of some holding companies to sell their own securities and to invest the proceeds in buying the securities, particularly the common stocks, of operating companies. The holding com-

⁹⁷ *Utility Corporations*, No. 72-A, pp. 719-723.

panies also aided by advancing loans when it was not expedient for the subsidiary to offer its securities in the investment market. No doubt more adequate financing at lower costs has been made available to the small, local utility, especially to those located in the southern or western states. But it may be doubted whether the holding company has been able to make capital available more abundantly or more cheaply for the larger operating companies or for those located in the eastern section of the country.

(2) Diversity in investment. The gain to investors from "diversity" through the substitution of holding-company securities for operating-company issues has been iterated and reiterated by holding-company spokesmen. The validity of the claims with respect to diversity is much disputed. The experience of the depression did not support the claims that had been made with respect to securities issued on the basis of a diversified holding of operating-company securities, but whether the disappointing showing reflected on the diversity principle in the abstract or whether the benefits of diversity were more than offset by other faults in the financial practices of holding companies could be determined only by an analysis of the financial history of the particular holding-company system.⁹⁸

Disadvantages to operating companies and consumers. The disadvantages at which the operating companies were sometimes placed by the policies and practices of their holding companies frequently deprived the consumer of any benefits which he might have sustained from the development of the holding-company system, and in a few instances left him in a worse position.

(1) Excessive purchase price. One grave objection to unregulated acquisitions of operating companies by holding companies, especially when there was competition between holding-company groups for the control of the same property, was the excessive prices paid for strategically located properties. The evils of the excessive price were continuing—pressure to wring the maximum of income from the costly property, write-ups of assets to justify the price, neglect of provision for depreciation, et cetera.

(2) Write-ups and stock-watering. The practices of write-ups and stock-watering have been fully discussed, and it remains only to consider their effects upon the consumer. Normally, the write-up was accompanied by an increase in the surplus account and thereafter an increase in outstanding securities, that is, stock-watering. The effect of the write-up was always a distortion of the true rate of earnings, forestalling criticism of rates as too high, constituting an obstacle to any reduction in earnings, and permitting the company to conceal its true financial condition. Most of the write-ups were capitalized through the issuance of securities which were sold to the investing public. Such write-ups as were not capitalized were included in surplus account and formed the basis of unsound financial policies, especially with respect to dividend payment.

The consequences of these policies for consumers are difficult to determine quantitatively, but it may safely be affirmed that the net effect was to keep the level of charges to consumers higher than they would otherwise have been. If the connection between write-ups and rates were not more direct, as it

⁹⁸ See Douglas, *Democracy and Finance*, pp. 152-162.

usually was, the deterioration in the investment standing of utility securities should be expected to produce first an increase in the costs of capital and ultimately a higher rate of return and higher charges to consumers.

(3) *Pyramiding of control.* In the present context, it may be noted that the pyramiding of control resulted in concentrating the policy-making functions for the industry in the hands of individuals whose financial exigencies usually required that they give first consideration neither to the consumers nor to the genuine investors who supplied the operating properties with their equipment, but to the relatively speculative investors who held the securities of the holding companies. Furthermore, the pyramid was so sensitive to every change in the income of the operating companies and so grossly overcapitalized that the managements could not contemplate any reduction in the earnings of the operating companies with equanimity, even when required in fairness to consumers. In addition, the pyramiding process brought collateral dangers—the possibility of manipulation of accounts, secrecy as to financial conditions, misrepresentation of assets, liabilities, and income, diversion of funds to affiliated companies, et cetera. The pyramiding of control was an evil in itself and it was the fountain from which other evils sprang.

(4) *Lack of planning in consolidations.* A substantial part of the empire-building among electric and gas holding companies was in direct conflict with all the dictates of engineering efficiency. Competitive considerations and opportunism, especially in the 1920's, rather than sound economic planning, characterized acquisitions. Indeed, the operating properties were frequently so scattered, so surrounded by properties belonging to other systems, that the organization of an economically integrated system was often impossible. This evil was more apparent among the speculatively managed holding companies and among the systems that grew most rapidly in the later stages of holding-company development.

(5) *Manipulation of accounts.* The preceding discussion of holding-company practices makes it abundantly clear that the accounting practices of the holding companies did not always conform to the established standards. Like pyramiding, the manipulation of accounts was an evil in itself, concealing the true condition of the company and misrepresenting the costs of rendering a public service, but the indictment against the manipulation is more serious than mere misrepresentation—it permitted a variety of practices which increased the cost of the service and weakened the financial position of the utilities.

(6) *Inadequacy of the provision for depreciation.* In general, the light and power utilities followed the retirement-expense method of accounting for depreciation, accumulating a reserve only to the extent necessary to equalize the annual charges against operating expenses. But the Federal Trade Commission investigation revealed that the reserves accumulated and the sums charged annually for depreciation were inadequate even on the retirement basis.⁹⁹ Many companies made smaller provision for depreciation than the claims which they submitted in making their returns for the federal income tax.

⁹⁹ *Utility Corporations*, No. 72-A, pp. 496-511.

Inadequate provision for depreciation had important consequences for consumers: new capital had to be raised to provide replacements, increasing the cost of the service; the overstatement of net income permitted the dissipation of the utility's funds through the payment of dividends out of capital; additional security issues increased the cost of all capital and doubtless retarded new investments in extending and improving the service.¹⁰⁰

(7) Excessive management and service fees. Whether the management and other service fees which the holding companies and their affiliates charged to the operating utilities are judged excessive depends on the standards adopted for measurement. The fees were seldom in excess of the cost to the operating company of supplying itself with an equivalent service. But the fees charged were greatly in excess of the cost to the holding company or to the service affiliate. It has generally been assumed that the cost standard was the only justifiable standard for a regulated industry, it being inappropriate for one "department" of an enterprise to profit on its dealings with another "department."

(8) Excessive construction fees. Unlike management fees, the amount of the construction fees did not have an immediate effect upon the costs of rendering the utility service. But these fees did increase the capital costs of the utility company, and in the long run meant a larger fair return and a larger provision for depreciation.

Disadvantages to the investing public. The same policies which were detrimental to the operating companies and to the consumer were also prejudicial to the interests of the investing public.

(1) Pyramiding. There were two serious consequences of pyramiding from the investor's point of view. First, the reduction in the investment by which the control of the system was maintained created a financially irresponsible management; their interests were speculative in that they were identified with the earnings of the top-holding company; and their financial interests—for example, in the matter of the charges to operating companies for management and other services—were opposed to the interests of the investors in the operating and intermediate holding companies. Secondly, the investors found that the holding-company securities which they accepted in exchange for securities in the operating companies were more remote from the source of the earnings, and hence, more speculative; those who accepted the senior securities of a second-degree or higher-degree holding company exchanged a direct claim to the residual earnings of the operating company for a "preferred claim to a deferred claim to the residual earnings" of the system.

(2) Speculative acquisition of operating properties at excessive prices. The investor was definitely injured whenever his holding company paid an excessive price for new properties. He experienced a dissipation of the surplus which the company might previously have built up out of earnings, and where the income from the new property did not justify the purchase price, the rate of earnings for the entire system suffered a diminution.

(3) Write-ups and inflations. Whether the write-ups arose from promoters' attempts to capitalize prospective earnings or from a program of readjusting

¹⁰⁰ *Utility Corporations*, No. 72-A, pp. 849-851.

capital accounts, the issuance of securities on the basis of such write-ups was clearly stock-watering. When the increase in securities was in bonds and preferred stocks, the financial position of the issuing corporation was distinctly weakened and the probabilities of receivership, with all its losses to security holders, were brought nearer. Where the result of the stock-watering was to create the appearance of a balanced capital structure, investors were deceived into placing further funds with the holding company. Even where the write-ups were not accompanied by an increase in outstanding securities, the write-ups had a speculative influence, misrepresented the financial position of the corporation, and aided in the deception of investors.

(4) Misrepresentations and deceptions. While misrepresentations and deceptions were not characteristic of all holding companies, the presence of such practices among some of the larger and more prominent justifies a listing of this charge in appraising the effect of holding companies on investors. That such practices were possible was largely the fault of the lax corporation laws of some of the "bargain-counter" states in which the holding companies were incorporated. That some of these practices were not only reckless and improvident, but actually criminal, is evidenced by the court actions that were brought against some holding-company executives and the jail sentences that followed.

The multiplication of different classes and varieties of securities, carried to the extremes practiced by some companies, certainly made it impossible for investors to appraise intelligently the investment qualities of the securities they were asked to buy. Misrepresentations, innocent or otherwise, by security salesmen were a natural consequence.

(5) Manipulation of stock-market prices. Although stock-market manipulations were not general, the practices of a minority of the holding-company managements created widespread distrust on the part of investors with respect to all utility securities. The investors lost hundreds of millions of dollars in the collapse of security prices. In some instances, they paid excessive prices as a result of the speculative fever that gripped the security exchanges. In other instances, the misrepresentations of the utility and holding companies' financial condition that prompted their purchases were directly chargeable to management. The most vicious of all misrepresentations were the deliberate manipulations of the prices of securities on the stock exchange with full knowledge that tremendous losses would be imposed on investors.

(6) The diversion of earnings to non-utility affiliates. The system of service contracts resulted in providing the top-holding companies with a source of income that came ahead of even the senior bonds of operating companies. Where these charges were excessive, the net earnings of the utilities were diminished, to the detriment of all investors in the utility companies and in the intermediate holding companies.

Disadvantages with respect to regulation and public control. The most serious objection to the holding-company system has been the fact that it made effective regulation of public utilities impossible.

(1) Absence of commission control over holding companies. The holding company has not been considered a public utility company, and so has not been subject to the jurisdiction of the state commissions. Even if the holding

company should be classified as a public utility engaging in a business "affected with a public interest," it would still be difficult, if not impossible, for the states to establish jurisdiction over corporations operating in many states.

(2) Complexity of intercorporate relations. The holding-company systems developed such complexity of intercorporate relations that it was generally impossible for a state regulatory authority, even with the co-operation of the holding-company management (which was often lacking), to obtain accurate data with respect to the effect of the holding company on the costs and conduct of local operating utilities. In some instances, as the Federal Trade Commission's investigation revealed, it was apparently one of the purposes of the holding-company management to create corporate relations which would place certain affairs beyond the reach of commission inquiry and control.

(3) Problems of interstate commerce. The development of the holding-company systems placed an increasing proportion of the utility business in the field of interstate commerce beyond the reach of the states.¹⁰¹

(4) Circumvention of state laws. The operations of the holding companies circumvented many specific state laws. The Massachusetts law against the issuance by a foreign corporation of its own securities on the basis of its holdings in domestic corporations, without specific statutory authorization, was evaded through the use of the voluntary trust by which holding companies extended their domains into that state. State laws requiring that utility businesses be conducted by domestic corporations were effectively nullified when all the stock of that domestic corporation was owned by a foreign holding company. Requirements that securities be issued at par were evaded when the securities were issued to an affiliated corporation and the discount was concealed in a financing charge. Laws imposing double liability on stockholders have been met by having all the stock held by an especially created foreign corporation whose stock carried only single liability. The list could be lengthened. It is probable that some of the state laws that were evaded or circumvented were unwise and uneconomic, but the fact remains that the holding companies were able to defeat the declared purposes of state legislatures.

(5) Secrecy and concealment respecting intercompany relations. There have been repeated instances in the preceding discussion where it has been apparent that the regulatory authorities could not determine accurately the basis for intercompany transactions. The write-up of assets and the inflation of securities made it difficult to discover either the true investment in the property or the actual cost of capital. The basis for charges for managerial and other services, particularly the costs of rendering those services, were not available to regulatory authorities. When the holding companies refused to acknowledge the right of the commissions to push inquiries into their relations with subsidiary operating companies and refused to supply requested information, the state commissions were generally blocked in their efforts to make regulation of the operating companies effective.

(6) Write-ups and inflation of assets. The write-ups and inflation of capital accounts misstated the investment in operating properties, prevented commissions from placing reliance on the rates of earnings shown by the com-

¹⁰¹ Chapter V.

panies' books, and often deprived the commission of the support of public opinion that would have been vocal if the true rate of earnings of the operating companies had been a matter of public knowledge. If the commission sought to regulate rates on a basis uninfluenced by write-ups, it was compelled either to engage in the difficult task of reconstructing the actual historical cost of the property or to undertake a time-consuming and costly valuation of the property. In either case, the whole program of rate regulation was rendered less effective.

(7) Stock-watering and speculative financial policies. The holding companies were not subject to any effective control over their capital issues prior to the early 1930's. The results of that situation in terms of stock-watering and other speculative practices have already been remarked. The investor did not distinguish readily between the holding company and the operating utility; and the significance of the distinction was blurred by the deliberately adopted publicity of some holding companies. Consequently, any policies which added to the speculative character of holding-company securities, or which resulted in losses to investors, undermined the investment position of all utility securities and increased the cost of capital to the industry.

(8) Public relations. The public relations between the utility industries and the general public began to deteriorate with the first report of the Federal Trade Commission in 1927, based on an investigation started in 1925. In 1928, with the beginning of the more extensive inquiry, the public esteem for the industry, especially for the electric utilities, reached a new low. Effective regulation is difficult, if not impossible, in an atmosphere of distrust, yet such an atmosphere was the inevitable result of the revelation of the practices of the more notorious holding companies. Much of the criticism of public service commissions and the charge that there has been a breakdown in public regulation resulted from circumstances over which the commissions had no control; nevertheless it vastly increased the difficulties of their regulatory tasks.

In conclusion. The holding companies, at least those that were more conservatively managed, brought many gains to the utility industry, especially to those sections of the industry that were organized as small, isolated units. As the holding-company system grew to maturity, excesses and abuses of the gravest order became so prevalent as to be characteristic, infecting the "good" companies as well as the "bad." As it existed and performed in the 1920's, there was no economic defense or justification for the holding-company system; the minimum of "reform" required, of necessity, changes that would appear "radical" against the background of that period.¹⁰²

¹⁰² The holding-company movement was not confined to the utility fields but was a general characteristic of American business. It may be expected that the same practices were commonplace among other holding-company dominated industries as were found in the electric and gas industries. In some industries, however, the pressure of competition may have operated to check certain of the excesses that were possible under conditions of regulated monopoly.

STATE AND FEDERAL RESPONSIBILITIES IN UTILITY REGULATION

I. INTRODUCTORY

THE PURPOSES OF REGULATION. The early regulation of public utilities was essentially restrictive in character. Both in statutory provision and commission activity there was an underlying assumption that only the interests of the consumers required protection. Little or no attention was given to the claims of investors or to the long-term ability of the corporation to raise new capital. In contrast to the restrictive regulation of the earlier period, modern regulation may be described as protective in character. It is now quite generally recognized that all regulatory authorities have a threefold responsibility—to consumers, to investors, and to the community.

The consumer. The importance of regulation to the consumer is often underestimated by those who refer to the few cents a day which consumers spend for particular utility services. In the aggregate, private utility corporations other than railroads collect approximately as much from consumers as the total tax revenues of all local governmental units in the United States.¹ The cost of utility services appears not only in the direct payments made by the individual consumer, but also indirectly in the expenditures for other goods and services. The most obvious interest of the consumers is in reasonable rates: the general level of rates should be reasonable in relation to the cost of rendering the service, and the rates for each class of service should be reasonable in relation to the charges for all. It is equally important that the service be adequate in quantity, that the quality of the service conform to the prevailing standards, and that extensions and improvements in the service be available as needed.

The investor. The protection of the investor in the receipt of a reasonable return upon his legitimate investment is not inconsistent with the protection of the consumer, except in the case of a declining industry. The protection of the investor is a proper object of regulation, not merely as a matter of fair play and justice for those who have provided the capital funds with which the utility operations are carried on, but also in order that additional capital may be readily secured at reasonable costs.

The community. The responsibilities of regulatory authorities are not exhausted with the protection of consumers and investors: the long-term interests of the community at large must be safeguarded. The protection of the community imposes upon the commission or other body a measure of re-

¹ In 1932, the tax collections of local governments was estimated at \$4,716,000,000 (Total tax collections were estimated at \$8,147,000,000, federal collections accounting for \$1,789,000,000 and state for \$1,642,000,000). (National Industrial Conference Board, *Bulletin*, Sept. 15, 1939.) In the same year, private utility corporations (electric, traction, gas—manufactured and natural—, telephone, and, telegraph) had gross operating revenues of over \$4,500,000,000. (*Moody's Public Utilities*, 1938, p. a3.)

sponsibility for the continuing financial health of the company. In the interests of adequate service, the utility corporation is ordinarily protected from the competition of a like utility. It is likewise so regulated as to protect the future community from either poor service resulting from a deterioration of the physical plant or from high costs consequent upon an impairment of the investment character of its securities and insufficient capital.

THE SCOPE OF REGULATION. The scope of regulation, both with respect to the industries controlled and the activities subject to regulation, has experienced a continuing growth. Nearly all the activities of utility corporations are now under the supervision of regulatory commissions. Regulation began historically with the control of rates, with the goal of preventing discriminatory and exorbitant charges. It soon became apparent that control of rates was of little importance without the power to establish service standards. It was then found that the main objectives of regulation were jeopardized by activities which were beyond the reach of the regulatory authority. Hence, regulation has been extended to accounting practices, operating expenses, the character and conditions of security issues, the propriety of intercorporate relations, the conditions of entry into the business and the necessity of capital extensions and improvements, and the circumstances under which mergers and acquisitions of securities or assets will be permitted. Only the more progressive commissions have been delegated authority over all of the activities enumerated, but all of these activities are common objects of regulation in a substantial number of the states.

THE HISTORICAL DEVELOPMENT OF REGULATION. The historical antecedents of the modern governmental controls need not be noted in detail. It would, of course, be possible to trace regulation far back into antiquity—to the price edicts of Diocletian, the medieval doctrine of the "just price," the regulations of the craft and merchant guilds, and the all-pervasive controls of the mercantilist state. Or the economic regulations of our own colonial legislatures might provide the basis for a study of the origins of modern regulation.

The beginnings of comprehensive public utility regulation in this country are usually identified with the establishment of the Massachusetts Board of Railroad Commissioners in 1869.² In the 1870's, a number of the Middle Western states, under the stimulus of the Granger activities, created commissions for the regulation of railroads and other businesses. Prior to this period of commission regulation, there had been unsuccessful attempts to deal with the control of utilities by other devices—through charter and franchise provisions, through the judicial enforcement of the common-law obligations to render adequate service at reasonable and nondiscriminatory rates, and through the enactment of statutory rules governing the conduct of such businesses. Many of the Granger commissions survived only a few years, but they were followed by more enduring bodies.

The commission, with its modern complement of powers and responsibilities, dates from 1907 when Wisconsin and New York led the way with a revision of their regulatory statutes. The change from the restrictive purposes of control to the contemporary emphasis on the protective character of regu-

² Mass., *Acts of 1869*, c. 408.

lation may be said to date from the period of the World War. In the regulation of railroads, the Transportation Act of 1920 first gave the Interstate Commerce Commission the power to regulate security issues, to establish minimum rates, to provide for the consolidation of railroads (thus giving up what remained of the theory of competition in the rendition of utility services); and most significantly of all, it imposed on the Commission the positive duty of establishing rates for carriers in geographic groups so as to permit the earning of a fair average return on the property of the carriers.³

2. THE LEGAL BASIS OF REGULATION

In the consideration of the legal basis for the control of public utilities,⁴ it was noted that there was no essential or inherent difference between the public interest attaching to businesses subject to public utility regulation and the public interest attaching to other enterprises. The fundamental differences lie in the measures necessary to protect that public interest. Nor is there any defensible distinction between private businesses and the so-called public businesses; the terms have meaning only as a description of the nature of the responsibilities imposed in the interests of the community on the respective undertakings. In short, public control of business is justified whenever the public interest is clearly discernible and the means of protecting that public interest are available.

The federal system of the United States raises special problems in the formulation of a program of public utility regulation. Both the national and state governments are sovereign powers, with full jurisdiction over all matters within their territorial limits except where the federal Constitution, as interpreted by the Supreme Court, limits the effective power of one or the other government. In some respects, this divided responsibility has proved favorable to experimentation with alternative solutions for economic problems. In other ways, the dual sovereignty has introduced complications that have repeatedly and seriously interfered with the creation of a rational and effective regulatory program. In the simple economy of the handicraft and petty trade which characterized the last quarter of the eighteenth century, the line between local matters and those of national concern was reasonably clear and seemed the natural basis for defining the respective spheres of the national and state governments.

The economic developments of the nineteenth and twentieth centuries changed the simple pattern which had served as the basis of the separation of powers of federal and state governments. Improvements in transportation methods and modern facilities for communication made national markets a possibility; the evolution of large-scale production and the growth of big business made them a reality. To an ever-increasing extent, all business has become a matter of national concern, and the physical movement of goods and services across state lines no longer serves as an accurate index of the extent to which the operations of particular businesses make their influences felt in regions remote from the physical site of their activities.

³ 41 Stat. 456, c. 91, Approved Feb. 28, 1920.

⁴ Chapter I.

The complications inherent in the dual system of national and state authority and responsibility have been multiplied by the ease and success with which the authority of the judiciary has been invoked by those who have opposed extensions of regulatory authority. Posing as a defender of the power of the national government and of the freedom of interstate commerce, the opponent of state controls has challenged the state authority as an interference with, or burden upon, interstate commerce. Or, if the freedom of interstate commerce was not at stake, the Fourteenth Amendment, enjoining the deprivation "of life, liberty, or property without due process of law" or the denial of "the equal protection of the laws" has served the purposes of those who would render state legislation powerless. A similar weapon against the exercise of federal authority has been found in the provisions of the Fifth Amendment that "no person shall . . . be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation." Even if federal legislation escape condemnation on this ground there is always the possibility that the courts may judge the regulation to be an invasion of the powers reserved to the states, and hence a contravention of the Tenth Amendment.

3. STATE JURISDICTION

The power of the state to undertake the regulation of public utilities and the other businesses affected with a public interest may be given in the state constitution or found in the police power, that undefined residual power of a sovereign government to do all things necessary for the general welfare. Though the former is less usual, there are a few states whose constitutions provide specifically for the control of public-service enterprises.⁵

The more usual source of regulatory authority is the police power. The nature of that power and the occasions for its exercise have been developed in the earlier discussion of the "public utility concept."⁶ The scope of the police power, as well as the propriety of its exercise, depends upon the circumstances peculiar to the individual case, but under recent decisions of the Supreme Court, it may be said that this power is relatively unrestricted. Whenever abuses involving serious social consequences for the entire community are associated with the conduct of any business, that business becomes an appropriate object of regulation by the state, and the nature and extent of the regulatory measures adopted may be determined by the character of the abuses to be corrected. State regulation has evolved on an experimental basis; new problems have brought forth new control devices; those which have proved successful have been widely copied, while those that have failed to correct abuses have been discarded.

In the enumeration of powers denied to the states, the Constitution makes possible an exercise of jurisdiction by the states over matters which are beyond the control of the single state. In the provision that states may enter into compacts with one another only with the consent of Congress, lies the possibility that two or more states may, with the approval of Congress, act

⁵ Louisiana, North Dakota, and South Dakota may be cited as examples.

⁶ Chapter I.

jointly to solve problems beyond the power of the individual state.⁷ Thus it would be constitutional for a group of states, with the consent of Congress, to adopt a program for the development of waterways, highways, water-supply systems, and hydroelectric enterprises, or to undertake the regulation of the activities of corporations whose activities extend into two or more states. This procedure would permit the states to create and administer their own machinery of regulation without the direct intervention of the federal government. To the extent that the problems of control are essentially regional rather than national in character and scope, the compact method would appear to have a certain attractiveness. Regulation would be undertaken by those immediately concerned with the problem; it would presumably be more responsive to regional needs and more intimately acquainted with local and regional conditions.

The negotiation of compacts is ordinarily conducted directly by the states concerned, usually without the collaboration of the federal government. When and if an agreement is reached, it is submitted to Congress, and if adopted by Congress and the legislatures of the respective states, the agreement becomes operative. Over threescore such compacts received congressional approval during the first century and a half of our history as a nation. The majority of such agreements have been concerned with the location of the boundaries between states. A goodly number have involved agreements as to the apportionment of the water supply of various rivers and some have pertained to the development of hydroelectric resources. The best known of these compacts have been those concluded between New Jersey and New York respecting the development of the port facilities of New York harbor.⁸ While the use of compacts has been discussed for a wide variety of problems—uniform standards with respect to the hours, wages, and working conditions of labor, the regulation of milk prices, the control of interstate utility enterprises, and the regulation of the oil industry—experience with the compact would seem to indicate that it is most successful where a single agreement may settle a single problem. It is not yet demonstrated that the compact method is suited to the tasks of regulating utilities and other businesses where continuous adjustments to changing conditions are necessary.⁹ Furthermore, governmental programs, such as the regulation of utilities, which encounter the vigorous opposition of important economic interests, can seldom be implemented by means of interstate compacts, for if interests adversely affected can prevent action by a single state the whole program may be defeated.

⁷ Art. I, Sec. 10, Cl. 3.

⁸ In 1833, an agreement respecting the state boundaries and jurisdiction in New York Harbor; in 1919, an agreement covering the construction of a tunnel under Hudson River; in 1921, the creation of the Port of New York Authority.

⁹ Where the compact involves matters of policy, especially where the public policy is itself subject to modification, there is greater difficulty in reaching agreement, and the machinery for amendment and revision, requiring agreement among several states plus ratification by Congress and the several state legislatures, is so cumbersome as to lead to the conclusion that regional regulatory problems may best be left to the federal government, with such provision as can be made for collaboration of the federal and state agencies.

4. FEDERAL JURISDICTION

FEDERAL POWERS. The federal government may exercise only those powers which have been conferred by the Constitution, as interpreted by the Supreme Court. While many have been significant in the shaping of the economic and legal framework within which economic activities have their play, the constitutional provisions of principal concern in the regulation of public utilities are the commerce and tax powers.

THE COMMERCE CLAUSE. *Its purpose.* The historical purpose of the commerce clause is to be found in the experience of the Confederation with the conditions of economic confusion and chaos created by the conflicting and discriminatory regulations of the independent states. It was a fundamental purpose in the framing and adoption of the Constitution to make the United States a single economic area, to prevent interference with national commerce through conflicting or hostile state laws, and to promote the economic development of industry and trade through uniformity of regulation.

The constitutional provision. In simple and inclusive language the Constitution provides that the Congress shall have power to regulate commerce with foreign nations, among the several states, and with the Indian tribes. In adjudication, the courts have favored a broad interpretation of "commerce" to embrace every phase of commercial and business activity and intercourse, to comprehend intercourse for the purpose of trade in any and all of its terms, including the transportation, purchase, sale, and exchange of goods and services, and to include communication as well as the physical movement of commodities and persons. The power of Congress is "supreme and plenary," with no limitations other than those set forth in the Constitution itself. And its regulatory jurisdiction extends to all who engage in interstate and foreign commerce and to all the objects of such commerce. Interstate commerce, broadly considered, exists whenever there is trade or other intercourse between parties outside of the same state. It does not end at the state line, but continues until the good is merged with the general mass of goods within the state; and the constitutional protection of interstate commerce is operative so long as a commodity may be exposed to discriminatory treatment by reason of its foreign origin. In carrying out the purpose of the constitutional provision it is essential that the power be coextensive with all that interferes with, or obstructs, interstate commerce. And the form that regulation takes, unless forbidden by the Constitution, lies within the discretion of Congress.

The occasion or proximate reason for the assertion of federal jurisdiction has varied from one business to another. Some economic matters must obviously be entrusted exclusively to the federal government, as the control of coinage, the standard for weights and measures, and bankruptcy proceedings. The development of enterprises supplying national markets, the natural outcome of increasingly large-scale production and improvements in transportation and communications, created national problems at a time when business was outgrowing effective state control. Thus the common industries and businesses come increasingly within the domain of the national, rather than the state, government. The utility industries have participated in this transition. Some

utilities have been national or interstate from their inception; radio waves do not halt at state boundaries; other utilities have attained national stature after a relatively brief period of growth; railroads, the telegraph, and the telephone are good examples. Recent technical developments have made long-distance transmission of electric energy and natural gas economically feasible; but even without these technical developments, the spread of the holding-company system in these two fields sufficed to create an emergency in regulation that could be resolved only by the assertion of federal authority.

The exclusive powers of Congress. Any interference by a state with the free flow of commerce between the states is unconstitutional, and of course, what is forbidden to a state, is likewise prohibited to an individual. Under the judicial interpretations of the commerce clause, there can be no divided responsibility where the control of interstate commerce is involved,¹⁰ and where the federal government has acted, its power has been recognized as paramount.

The ultimate test of the authority of the federal government is to be found in a realistic appraisal of the nature of the relations and matters with respect to which the assertion of the federal authority is contemplated. Whatever matters of commerce are national in their nature, or admit of only one uniform system of regulation, are subject to the exclusive jurisdiction of the federal Congress, and even in the absence of congressional action, the courts have consistently ruled that the silence of the federal government is equivalent to a declaration that such commerce shall remain free and unregulated.

It is apparent that the police power of the state cannot be cited in support of an exercise of state authority in regard to interstate commerce. Indeed, every direct regulation of, or interference with, interstate commerce, by any state legislation or by the action of any state authority, is unconstitutional and void, even though the regulations in themselves may be reasonable. The necessity for this general rule is apparent when it is realized that reasonable regulations by one state, if inconsistent with those of another state, would impose serious obstructions on the freedom of interstate commerce.

THE TAX POWER. The tax power is potentially one of the most powerful instruments of control that any government can exercise. By taxation, an industry may be created or destroyed, the flow of commodities directed, the investment of capital encouraged or discouraged, limitations of quantity fixed, standards of quality enforced, and even the details of business operations brought under coercion. Moreover, there is reason to believe that the founding fathers contemplated that the tax power would be an effective instrument of control in the hands of the federal government, just as it had been an accepted regulatory mechanism in all of the governments, colonial and foreign, with which they were familiar.¹¹ In the drafting of the Constitution, the tax power was granted without serious restriction: Congress may levy taxes of every kind and nature with the single exception of taxes on exports;

¹⁰ It has been said by the Supreme Court that the concept of concurrent federal and state jurisdiction is an anomaly not known in the Constitution, and that the concurrent power of two sovereign powers is "as inconsistent in principle as it is impractical in action." (*Passenger Cases*, 48 U.S. [7 How.] 399 [1849].)

¹¹ Hamilton and Adair, *The Power to Govern*, pp. 121-127.

and only two rules are prescribed for tax administration—duties and excises must be uniform, while direct taxes must be apportioned among the states according to population.¹²

While the use of the tax power for regulatory ends is more common with the states, there are numerous instances of a similar use of the tax power by the federal government.¹³ The most obvious example of the imposition of a tax for control purposes is the protective tariff. When the federal government undertook to establish a sound national currency, under the National Banking System, the bank notes issued by state institutions were taxed out of existence.¹⁴ The regulation of the narcotics trade and the control of oleomargarine have been alike occasions for the use of the tax device.¹⁵

Unfortunately for efficiency in government, the courts have hemmed in the tax power of the federal government with certain restrictions. Judicial interpretations have largely deprived the tax power of its position as an independent power of the federal government by holding unconstitutional those taxes whose primary purpose was not the raising of revenue. Congress has sought to use the tax power to regulate matters not readily amenable to the exercise of the commerce power, but the courts have held these attempts unconstitutional as an interference with matters beyond the jurisdiction of the national government. Thus the Child Labor Tax Law, taxing the net income of those employing child labor contrary to the standards set forth in the statute, was declared invalid.¹⁶ Similarly, the federal control of future sales on commodity exchanges through the imposition of prohibitory taxes on those violating established regulations was held an improper use of the tax power.¹⁷ The judicial condemnation of the processing taxes under the Agricultural Adjustment Administration is a more recent and more extreme instance of the limitations which the judiciary has placed in the way of this instrument of control.¹⁸

5. JURISDICTIONAL CONFLICTS BETWEEN FEDERAL AND STATE AUTHORITY

Jurisdictional conflicts between federal and state authority may best be discussed in relation to concrete situations. It has already been noticed that such conflicts are seldom between the state and federal governments; rather, individuals subject to the authority of one or the other government find in

¹² It was the second requirement that necessitated the adoption of the Sixteenth Amendment to make possible the taxation of incomes.

¹³ It is generally recognized that the use of a tax for regulatory purposes impairs its effectiveness as a source of revenue. This fact does not, however, prevent the use of some taxes for the primary purpose of raising revenue while other taxes are used as instruments of control.

¹⁴ *Veazie v. Fenno*, 75 U.S. (8 Wall.) 552 (1869).

¹⁵ *U.S. v. Dougherty*, 101 Fed. 439 (E.D.Pa., 1900); *In re Kollock*, 165 U.S. 526 (1897). In each case the Court viewed the raising of revenue as the primary purpose of the tax.

¹⁶ *Bailey v. Drexel Furniture Co.*, 259 U.S. 20 (1922).

¹⁷ *Hill v. Wallace*, 259 U.S. 44 (1922).

¹⁸ While affirming that the power of taxation may be used to carry into operation another power expressly granted by the Constitution, the Court asserted that the power to regulate agricultural production was not conferred by the Constitution and was therefore forbidden. And carrying the analysis one step further, it was ruled that the tax power might not be used to raise

the "freedom of interstate commerce" a strategic point for an attack on the constitutionality of state regulatory legislation; and in the powers reserved to the states, a defense against the assertion of federal jurisdiction with respect to their business operations.¹⁹ While such apparent conflicts of authority can be found in almost every phase of regulatory activity, the majority of cases have involved railroads, natural-gas utilities and electric companies. The discussions are all concerned with two related questions—whether a particular state regulation discriminates against or burdens interstate commerce, and whether the problem admits of diversity of treatment according to local circumstances or requires a single national system of regulation.

RAILROAD REGULATION. Three cases must suffice to illustrate the present division of authority between state and national governments in the control of railroads. The authority of the states to regulate businesses affected with a public interest was established largely with reference to the control of railroad corporations. Early cases had decided that the states have a commerce of their own which lies beyond the power of Congress to control and that in this field the states are as supreme as Congress in its control over interstate and foreign commerce. Early judicial pronouncements had likewise established that the states were without authority to undertake the direct regulation of interstate commerce and that any direct burden on interstate commerce was forbidden by the Constitution even though the federal government had not acted to assert its authority over that phase of interstate commercial activity.²⁰

The scope of state jurisdiction depends not simply on the language of the Constitution, but also upon the extent to which the national government has asserted the powers which are conferred on it by the Constitution. Thus in the absence of action by Congress, the states, in the exercise of their acknowledged jurisdiction over matters of local concern, may act even though their actions have indirect effects on the conduct of interstate commercial activities.²¹ This was essentially the situation presented by the Court in *The Minnesota Rate Cases*.

*The Minnesota Rate Cases.*²² A Minnesota statute provided for a maximum passenger fare of two cents per mile and maximum commodity rates on certain carload shipments. The Commission also fixed certain maximum class and commodity rates. These regulations were not opposed by the railroads directly, but suits were started by the stockholders of three of the railroads and injunctions against the enforcement of these two acts and the Commission orders were secured. The rates established within the state were

funds with which to "purchase compliance" with a policy, regulating agricultural production, which the government was without power to enforce. (*United States v. Butler*, 297 U.S. 1 [1936].)

This conclusion did not pass without a forceful and penetrating dissent by Justices Stone, Brandeis, and Cardozo.

¹⁹ And, of course, the legislation of either federal or state government may be attacked as contravening the Fifth or Fourteenth amendments, respectively, as depriving the individual of his property without due process of law.

²⁰ The doctrine has been summarized by Mr. Justice Hughes in *The Minnesota Rate Cases*, 230 U.S. 352, 396-397 (1913).

²¹ *Ibid.*, 402-403

²² 230 U.S. 352 (1913).

lower than those applying on shipments coming into the state and thus effected a discrimination against interstate commerce; some of the jobbing centers outside the state were no longer able to compete in the territory previously served; and serious economic dislocations could be avoided only by reducing the interstate rates in the territory adjacent to Minnesota or by the suspension of the regulations imposed by Minnesota.

Before the Supreme Court, the Minnesota regulations were challenged as imposing a direct burden upon interstate commerce and as being in conflict with the Act to Regulate Commerce. Since the state regulations did not even incidentally include the subjects of interstate commerce, the first objection involved only the possible indirect effects of the state regulations upon interstate commerce. Significantly, the interstate rates whose readjustment was necessary, if discriminations against interstate commerce were to be avoided, were rates which the carriers themselves had established; they had not been established or approved by the Interstate Commerce Commission. The Court concluded that the state was not estopped from regulating internal matters by the mere existence of the federal statute—that in the absence of action by the Interstate Commerce Commission, the states were free to adopt reasonable rates for intrastate commerce even though the carriers were thereby under the necessity of making certain reductions in the rates previously charged on shipments entering and leaving the state.²³

*The Shreveport Rate Cases.*²⁴ The year following the decision in *The Minnesota Rate Cases*, the Supreme Court was called upon to decide a similar conflict between federal and state jurisdiction, but in this instance the Interstate Commerce Commission had ruled on the reasonableness of the interstate rates. Shreveport, in Louisiana, and Dallas and Houston, in Texas, were competing jobbing centers serving eastern Texas. On the complaint of the Railroad Commission of Louisiana that interstate rates into Texas were discriminatory against traffic moving from Shreveport, the Interstate Commerce Commission investigated the rate structure and found that the interstate rates were substantially higher than those for similar traffic moving within the state of Texas; its order established interstate class rates substantially similar to the intrastate rates which had been fixed by the Railroad Commission of Texas. Thereupon the Texas Railroad Commission ordered a reduction in commodity rates, making them substantially less than the interstate class rates established by the Interstate Commerce Commission. In a second proceeding, the Interstate Commerce Commission found that the higher commodity rates from Shreveport into Texas were unduly preferential to the Texas cities and discriminatory against Shreveport. The carriers were ordered to correct this discrimination by ceasing to charge higher rates for transportation from Shreveport west into Texas than were charged for the carriage of such commodities from Dallas and Houston east toward Shreveport. The railroads contested this order in the Commerce Court on the ground that, as the interstate rates were found to be reasonable, the Interstate Commerce Commission was without authority to order their reduction. The Commerce Court ruled that the railroads were relieved by the Interstate Commerce

²³ *Ibid.*, 416-417.

²⁴ 234 U.S. 342 (1914).

Commission's order from complying further with the Texas order establishing the lower commodity rates within the state, and that the carriers could remove the illegal discrimination against interstate commerce by raising the intrastate Texas rates. The questions thus presented to the Supreme Court were whether Congress had the power to control intrastate rates to the extent necessary to prevent discrimination against interstate commerce, and, if so, whether this power had been delegated to the Interstate Commerce Commission.

Through Mr. Justice Hughes the Supreme Court answered both questions affirmatively. It was held that the power of Congress extended to all aspects of interstate commerce, even to the control of matters within the state where necessary to protect interstate commerce from discrimination. The intermingling of interstate and intrastate operations was said to be no barrier to the assertion of the superior power of Congress over matters coming within its constitutional jurisdiction, for wherever "the interstate and intrastate transactions of carriers are so related that the government of the one involves the control of the other, it is Congress, and not the State, that is entitled to prescribe the final and dominant rule."²⁵ The Court had no difficulty in finding that Congress had delegated to the Interstate Commerce Commission the power to remove any and all discriminations against interstate commerce.

*The Wisconsin Passenger Fares.*²⁶ The principle of federal supremacy affirmed by the Court in 1914 became a part of the Interstate Commerce Act with the amendments of 1920. The Commission was directed to remove all discrimination against interstate commerce, "the law of any State or the decision or order of any State authority to the contrary notwithstanding."²⁷ The full significance of this provision became apparent with the presentation of the *Wisconsin Passenger Fares* case to the Supreme Court in 1921. The Interstate Commerce Commission, in the discharge of its duty to adjust rates so that the railroads might earn a fair net income on their railway property, ordered an increase in fares for the carriers operating in the territory of which Wisconsin was a part. The railroads applied to the Wisconsin Railroad Commission for a similar increase in intrastate fares, which was granted except with respect to passenger fares, the increase in passenger fares being denied on the ground that a state statute prescribed a maximum of two cents a mile for passenger fares. An investigation by the Interstate Commerce Commission led to the conclusion that a passenger rate of 3.6 cents per mile on both interstate and intrastate passenger travel was necessary to provide carriers with the requisite revenue, and that the continuance of the 2-cent intrastate fare constituted a discrimination against interstate commerce. The Commission therefore ordered the carriers to remove the discrimination by increasing their intrastate fares to conform to the interstate level.

It would appear that two forms of discrimination against interstate commerce were implicit in the lower level of passenger charges: a discrimination against interstate passengers who traveled in the same cars with the same accommodations and paid 3.6 cents a mile while the intrastate traveler was paying only 2 cents per mile, and the general discrimination against interstate

²⁵ *Ibid.*, 354-355.

²⁶ 257 U.S. 563 (1922).

²⁷ Sec. 13 (4).

commerce arising from the inadequacy of the revenues which the carriers derived from their intrastate service. The Court was unable to find sufficient discrimination of the first type to warrant the Interstate Commerce Commission's order of a horizontal increase in these fares to 3.6 cents per passenger mile. Nevertheless, the Commission was sustained on the ground that the lower level of earnings from the intrastate business constituted a discrimination against, and a burden upon, interstate commerce, since the insufficient revenue from the intrastate business would have to be made up from the interstate traffic or the carriers would be left with an insufficient revenue to assure an adequate national transportation system.²⁸

From the above railroad cases and others on which the Court's decisions in these three cases rested, certain tentative conclusions are possible respecting the jurisdiction of the federal and state governments. (1) In the absence of federal regulation, the states in the regulation of their domestic affairs are not to be impeded by the possibility that their regulations may have some indirect and incidental effect upon interstate commerce. (2) But even in the absence of federal regulation, the states are without authority to burden or control interstate commerce directly. (3) The test of the ability of the states to pursue a policy of intrastate regulation which indirectly influences interstate commerce, in the absence of action by the federal government, is whether the matters involved require a single and uniform system of regulation; if such is the situation, the non-action by the federal government is interpreted by the courts as being equivalent to a declaration that such commerce shall remain free from regulation. (4) Where federal and state regulations come into conflict, the federal control takes precedence, even to the extent of requiring a modification of purely intrastate regulations.

NATURAL GAS AND ITS INTERSTATE MOVEMENT. The development of the natural-gas industry has brought it increasingly into interstate commerce, and its regulation has given rise to numerous constitutional questions concerning the proper sphere of state and federal government. The lateness of the federal government's entry into active regulation has left an opportunity for experimentation by the states which has been productive of much consequential litigation.

The conservation of natural gas. Oklahoma was among the first states to undertake the conservation of natural gas, seeking its retention for use within the state. A statute enacted in 1907 provided that domestic corporations operating pipelines should transport natural gas only within the state, and that foreign corporations should not be licensed to engage in the natural-gas industry; the sending of natural gas outside the state was forbidden, and to make doubly sure, it was provided that only domestic corporations should have permission to traverse or cross state highways with their pipelines (an effective barrier to the export of gas inasmuch as the state boundaries consisted of state highways). The constitutionality of this program was before the Supreme Court in *Oklahoma v. Kansas Natural Gas Company*,²⁹ and the statute was found to offend on the score that "no State can by action or inaction prevent, unreasonably burden, discriminate against or directly regu-

²⁸ 257 U.S. 563, 585-586

²⁹ 221 U.S. 229 (1911).

late interstate commerce or the right to carry it on." ³⁰ The right to engage in interstate commerce was held not to be within the power of the state to grant or withhold.

Several critical issues were presented by the case of *Pennsylvania v. West Virginia*.³¹ West Virginia is one of the important natural-gas-producing states. In the early years of the industry, the state encouraged the development of markets for natural gas both within and without the state, and by 1918 approximately 69 per cent of the gas produced was exported, much of it going to Pennsylvania and Ohio. By 1916 it was apparent that the demand for natural gas within the state would soon exceed the available supply, and in 1919 legislation was enacted with the purpose of preferring the domestic to the out-of-state market. The statute required that every pipeline company should satisfy, to the extent of its supply, the demands of consumers in the sections of the state where the gas was produced or through which it was transported; moreover, the Public Service Commission was empowered to require any company having a supply in excess of the requirements of its local consumers to furnish part, or all, of that excess to any company whose supply for local needs was inadequate. The majority ruling denied to the state the right to require that preference be accorded local consumers where the effect would be the withdrawal of a large volume of natural gas from interstate commerce. The fact that the pipelines were public utilities and therefore under an obligation to render adequate service to their local consumers was held not to justify the restrictions imposed.

State regulation of local companies distributing gas or electric energy that has moved in interstate commerce. The right of the state to regulate its local utilities engaged in the distribution and sale of natural gas that has been imported from another state has frequently been challenged. One of the earlier cases involved the jurisdiction of the Kansas Public Utilities Commission.³² The Kansas Natural Gas Company was engaged in the production of natural gas in Oklahoma and Kansas and in its transportation and sale to local distributing companies in Kansas and Missouri. The contracts with these independent distributing companies provided that the pipeline company receive a proportion (usually two-thirds) of the gross revenues which these local companies collected from their customers. Without seeking to set aside the contracts with the local companies, the receivers petitioned the commissions of Kansas and Missouri for increases in the rates charged by the local distributing companies. When the full amount of the requested increases was denied, suit was brought against the commissions, the cities served, and the local companies, alleging that the commissions were imposing rates which

³⁰ *Ibid.*, 262.

³¹ 262 U.S. 553 (1923). This decision found the Court sharply divided. Mr. Justice Van Devanter wrote the majority opinion, with Mr. Chief Justice Taft and Justices McKenna, Sutherland, Butler, and Sanford concurring. Justices Holmes, McReynolds, and Brandeis wrote dissenting opinions.

The case was brought eight days after the enactment of the West Virginia statute, without waiting for its effects to be manifest. The case before the Supreme Court was largely concerned with procedural questions—whether the suits presented a justiciable controversy, whether they had been prematurely brought, and whether the proper parties were before the Court. These questions are not pertinent to the discussion here.

³² *Public Utilities Commission of Kansas v. Kansas Natural Gas Co.*, 249 U.S. 236 (1919).

were inadequate and confiscatory and unduly burdensome to interstate commerce.

There was no question that the business carried on by the Kansas Natural Gas Company—the transportation of natural gas and its sale to local distributing companies for resale to consumers—was interstate commerce. And the company was successful in persuading the lower court that the rates established imposed a burden upon interstate commerce and confiscated its property.

The Supreme Court accepted the conclusion of the lower court that the business of the Kansas Natural Gas Company was interstate commerce, but it was held that the sale of gas by the local companies to their own consumers was not interstate commerce. It appeared that the interstate movement of natural gas ended when the gas passed into the local mains of the intrastate utility, and that the regulation of the conduct of these local distributing companies could not be attacked as a burden upon interstate commerce.³³ The Court pointed out that the receivers for the Kansas Natural Gas Company were under no compulsion to continue service under the unremunerative wholesale contracts.

The case of *Pennsylvania Gas Company v. Public Service Commission of New York* in 1920, presented a slight variation in the factual situation.³⁴ The Pennsylvania Gas Company was engaged in the transmission of natural gas from Pennsylvania into New York, where it was rendering a local utility service by supplying gas directly to consumers in Jamestown, Ellicott, and Falconer in New York. In opposing the attempt of the Public Service Commission of New York to regulate local gas rates in Jamestown, the company alleged that its business was interstate and immune from state control. Thus the essential question was whether the operation of a local utility was removed from the control of state authorities by reason of the company engaging in interstate commerce, selling to local consumers a commodity that had moved in interstate commerce.

The transmission of natural gas was a single and continuous movement from the source of supply in Pennsylvania to the consumers located in New York, and the Court held that the entire movement was interstate commerce. But the Court nevertheless considered that the matters regulated were essentially local in their nature and appropriate objects of state concern in the absence of federal regulation.³⁵

In 1924, the Kansas Natural Gas Company was back in the Supreme Court.³⁶ Having failed to secure additional revenue through an increase in the rates charged by the local distributing companies to which it sold its gas, the interstate pipeline company sought to improve its earnings directly by increasing its wholesale price to the local distributing companies from 35 cents to 40 cents per thousand cubic feet. This increase was made in Missouri without the consent of the Public Service Commission, and in Kansas despite the action of the Public Utilities Commission and a previous federal court order fixing a 35-cent rate.

³³ *Ibid.*, 245-246.

³⁴ 252 U.S. 23.

³⁵ *Missouri v. Kansas Natural Gas Co.*, 265 U.S. 298.

³⁶ *Ibid.*, 30-31.

The earlier Kansas Natural Gas Company case had involved the jurisdiction of the commissions over the rates at which the independent local companies sold to local consumers; the present case concerned the right of the commissions to control the wholesale price at which an interstate pipeline company furnished gas to local utilities. The factual situation differed from that in the Pennsylvania Gas Company case in that two companies, not one, participated in the movement of gas from the source to the consumer; and the title to the gas passed from the interstate, to the state, company at the wholesale rates in dispute. (It may be noted that the wholesale and retail companies were not affiliates subject to a common control.) The right of the states to regulate the wholesale rates was not predicated on the dubious ground that the transaction between the interstate company and the local distributing companies was intrastate business rather than interstate commerce. Instead, the argument of the state began with the proposition that the business was essential to the operation of local public-service enterprises; that since Congress had not acted, this business would be without supervision unless the states assumed responsibility for its control; and that in the absence of congressional action, it was competent for the states to regulate the wholesale prices in dispute.

The Supreme Court based its conclusions on the finding that the sale and delivery of the gas to the local distributing companies was a part of the interstate movement. Was this an aspect of interstate commerce that was essentially local, rather than national, in character, so that the states might regulate in the absence of congressional action? The Court returned a negative answer. "But the sale and delivery here is an inseparable part of a transaction in interstate commerce—not local but essentially national in character—and enforcement of a selling price in such a transaction places a direct burden upon such commerce inconsistent with that freedom of interstate trade which it was the purpose of the commerce clause to secure and preserve. It is as though the Commission stood at the state line and imposed its regulations upon the final step in the process at the moment the interstate commodity entered the state, and before it had become part of the general mass of property therein."³⁷ It is significant that in its dicta, this opinion appeared to reverse the dicta of the *Pennsylvania Gas Company* case, by stating that the interstate movement ended with the passage of the gas into the mains of the local company, thus in effect asserting that the federal jurisdiction might not follow the interstate commodity beyond that point.³⁸

³⁷ *Ibid.*, 308.

³⁸ "The business of supplying on demand, local consumers, is a local business, even though the gas be brought from another State, and drawn for distribution directly from interstate mains; and this is so whether the local distribution be made by the transporting company or by independent distributing companies. In such case the local interest is paramount, and the interference with interstate commerce, if any, indirect and of minor importance. But here the sale of gas is in wholesale quantities, not to consumers, but to distributing companies for resale to consumers in numerous cities and communities in different States. The transportation, sale, and delivery constitute an unbroken chain, fundamentally interstate from beginning to end, and of such continuity as to amount to an established course of business. The paramount interest is not local but national, admitting of and requiring uniformity of regulation. Such uniformity, even though it be the uniformity of government non-action, may be highly necessary to preserve equality of opportunity and treatment among the various communities and States concerned. . . ." (*Ibid.*, 309-310.)

A very similar situation led to a like decision in the *Attleboro* case two years later.³⁹ That the transmission of electric energy from Rhode Island to Massachusetts constituted interstate commerce was beyond dispute. There was, however, no control of such commerce by the federal government. Was it possible, therefore, for the Rhode Island Commission to regulate the price at which such power should be sold, or was this a direct burden upon interstate commerce, the regulation of a matter which by its very nature required uniform treatment on a national scale if regulated at all? According to the majority of the Court, the state of origin was in no better position to regulate an essentially interstate transaction than the state of destination, and the control of the wholesale price was held to be beyond the jurisdiction of the Rhode Island Commission despite its possible effects on the ability of a Rhode Island utility to fulfill its responsibilities to its other customers.⁴⁰

The strengthening of state jurisdiction—Litigation pertaining to the taxation of utilities. Two decisions of the Supreme Court involving the validity of the state taxation of utilities engaged in interstate commerce have established an area of state jurisdiction which apparently is not to be invaded by the federal government even with respect to companies engaged in interstate commerce.

Ohio imposed a franchise tax of 1.35 per cent of the gross receipts on all corporations engaged in supplying natural gas within the state, excluding all revenue "derived wholly from interstate business." The East Ohio Gas Com-

³⁹ *Public Utilities Comm. v. Attleboro Steam & Elec. Co.*, 273 U.S. 83 (1927).

The Narragansett Electric Lighting Co. had entered into a twenty-year contract with the Attleboro Steam & Electric Co. to supply all the latter's electric requirements at a specified basic rate, delivery to be made at state line. Changing economic conditions rendered the contract burdensome, and the Narragansett Company appealed to the Rhode Island Commission for a higher rate. A new schedule authorized in 1921 was enjoined in the federal courts. In 1924 the Commission, in another proceeding, found the existing rate unreasonable, interfering with the Narragansett Company's full performance of its duty to its other customers (though the Attleboro Company took only $\frac{1}{35}$ of the Narragansett Company's output), and ordered a new schedule which it stated would yield only a fair and reasonable return. On the ground that the transmission of electric current from one state to another was interstate commerce, and that the regulation constituted a direct burden thereon, the Supreme Court of Rhode Island reversed the order of the Commission. (46 R.I. 496, 129 Atl. 495.)

⁴⁰ *Ibid.*, 90.

Mr. Justice Brandeis was of the opinion that the authority of the Rhode Island Commission should be upheld:

"The business of the Narragansett Company is an intrastate one. . . . The problem is essentially local in character. The Commission found as a fact that continuance of the service to the Attleboro Company at the existing rate would prevent the Narragansett from performing its full duty toward its other customers and would be detrimental to the general public welfare. . . . The order complained of is clearly valid as an exercise of the police power, unless it violates the Commerce Clause.

"The power of the State to regulate the selling price of electricity produced and distributed by it within the State and to prevent discrimination is not affected by the fact that the supply is furnished under a long-term contract. . . . If the Commission lacks the power exercised, it is solely because the electricity is delivered for use in another State. That fact makes the transaction interstate commerce, and Congress has power to legislate on the subject. It has not done so. . . . Nor is this a case in which it can be said that the silence of Congress is a command that the Rhode Island utility shall remain free from public regulation—that it shall be free to discriminate against the citizens of the State by which it was incorporated and in which it does business. That State may not, of course, obstruct or directly burden interstate commerce. But to prevent discrimination in the price of electricity wherever used does not obstruct or place a direct burden upon interstate commerce. . . . It is like the regulation sustained in *Pennsylvania Gas Co. v. Public Service Commission*, 252 U.S. 23." (*Ibid.*, 91-92.)

pany furnished gas in more than fifty communities in the state, developing about one-fourth of its supply locally and importing the remainder from West Virginia and Pennsylvania. It challenged the application of the tax to that part of its gross receipts derived from the sale of the imported gas. However, the Supreme Court sustained the tax on the ground that the gas lost its interstate character when it passed from the high-pressure transmission lines into the local distribution mains.⁴¹

The *East Ohio Gas* decision further clarified the line between interstate and state business in the transmission of natural gas. The dividing line was taken as the juncture of the interstate transmission mains and the local distribution lines; the judicial determination rested on the physical location of the gas, upon the passage of the gas into the local mains. The inconsistency of this conclusion with the dictum in the *Pennsylvania Gas Company* case caused the Court to disapprove so much of the earlier dictum as conflicted with its more recent thought on the matter. This decision would warrant an inquiry whether there is not a stage in the movement of natural gas and electric energy *before* interstate commerce begins, during which the jurisdiction of the state of origin might be recognized. This query is reinforced by the fact that the Court made no attempt to distinguish between the scope of a state's jurisdiction for the different purposes of taxation and price regulation.

The pertinence of the question suggested by the Court's disapproval of the dicta of the *Pennsylvania Gas* case in the preceding opinion is emphasized by its decision in *Utah Power & Light Company v. Pfst.*⁴² The company challenged an Idaho license tax of one-half mill per kilowatt-hour on all electric energy produced within the state, arguing that the tax constituted a burden upon interstate commerce to the extent that it was applied to that part of its production which was transmitted from Idaho for sale in Utah.⁴³ The company based its case partly on the fact that the generation and transmission of electric energy is a single, simultaneous, and interdependent operation, whereas the state contended that the generation of electric energy was legally distinct from its transmission. Accepting the thesis of the state, the Court refused to find that the Idaho tax imposed a burden upon interstate commerce.⁴⁴

In summary, it would seem that the courts are prepared to permit the states to exercise a somewhat greater control over gas and electric corporations whose activities involve interstate commerce than over railroads. In the regulation of railroads, the extension of federal regulation has, to a considerable extent, displaced the control previously exercised by the states. And the federal government, in the control of the interstate operations of the railroads sometimes acts even in matters which are internal to the states. In

⁴¹ *E. Ohio Gas Co. v. Tax Commission*, 283 U.S. 465, 470-471 (1931).

⁴² 286 U.S. 165 (1932).

⁴³ Other grounds upon which the tax was challenged need not be considered here.

⁴⁴ "Without regard to the apparent continuity of the movement, appellant, in effect, is engaged in two activities, not in one only. So far as it produces electrical energy in Idaho, its business is purely intrastate, subject to state taxation and control. In transmitting the product across the state line into Utah, appellant is engaged in interstate commerce, and state legislation in respect thereof is subject to the paramount authority of the commerce clause of the federal Constitution. . . ." (*Ibid.*, 182.)

regard to natural gas and electric corporations, it appears that the movement of electric energy and gas from one state to another is definitely interstate commerce. But with the exception of its dicta in the *Pennsylvania Gas Company* case, and its decision in *Pennsylvania v. West Virginia*, the Supreme Court has chosen to regard interstate commerce as terminating with the passage of the interstate gas into the mains of the local distributing companies, thus preserving control of the states over local distributing companies even though the latter sell a commodity imported into the state. In the electric cases, the decisions are more confused: in the *Attleboro* case, the decision worked a serious limitation on the jurisdiction of the state; while in the *Utah Power & Light* case, a later decision, the tax jurisdiction of the state was not impaired by reason of the fact that the electric energy was moving in interstate commerce.

Where interstate commerce has been involved, the state commissions have been unable to control the prices at which the interstate transmission companies have supplied natural gas at wholesale to local utility companies. When a utility company subject to the jurisdiction of the state in respect to its local activities engages in interstate commerce, that part of its business is beyond the reach of the state commission, even though the interstate business influences significantly its conduct of its local operations. Under the rulings of the Supreme Court, these gaps in regulation could be closed with certainty only by the enactment of federal legislation.

RECENT FEDERAL LEGISLATION. Two recent federal enactments have sought to supplement state control of gas and electric utilities without encroaching on the recognized sphere of state control of these enterprises. Thus the Federal Power Act of 1935, in defining the jurisdiction of the Federal Power Commission over the interstate transmission of electric energy, reads that the powers conferred on the Federal Power Commission shall apply to the interstate transmission of electric energy and its sale at wholesale in interstate commerce, "but shall not apply to any other sale of electric energy or deprive a State or State commission of its lawful authority now exercised over the exportation of hydroelectric energy which is transmitted across a State line."⁴⁵ Similarly, the Federal Power Commission's jurisdiction over the issuance of securities of electric utilities is made conditional on the absence of control by a state commission. And throughout the Act, provision is made for a maximum of consultation and co-operation between the Federal Power Commission and the state regulatory authorities.

On June 21, 1938, the federal Natural Gas Act became effective, extending the jurisdiction of the Federal Power Commission to include the interstate operations of natural-gas utilities.⁴⁶ Congress excluded from the scope of the Federal Power Commission's authority the activities which the courts have recognized as being within the jurisdiction of the states.⁴⁷ And in the procedural sections of the statute there are the same elaborate provisions for the collaboration of the Federal Power Commission with the state regulatory agencies.

It is both inevitable and desirable that the future should witness an expan-

⁴⁵ 49 Stat. 838, Sec. 201 (b).

⁴⁶ 52 Stat. 821.

⁴⁷ Sec. 1 (b).

sion of federal control over the activities of those utilities which have hitherto been regulated only partially by the states, if at all. If this development of federal control follows the policies enunciated in recent legislation, the federal agencies will supplement, rather than supplant, the state commissions. Many utility organizations and activities, especially those connected with holding companies and corporations engaging in interstate commerce, will be brought under control for the first time, and those activities of local utilities that extend beyond the confines of the state will also be subject to governmental supervision. Moreover, the federal commissions will be in a position to develop much statistical and financial information essential to a proper regulation of the rates of local companies, information that was quite beyond the reach of the state regulatory bodies. And finally, regulation on a national scale will bring a larger measure of uniformity as to the principles and procedures of the state commissions.

THE INSTRUMENTS OF REGULATION

I. THE HISTORICAL DEVELOPMENT OF
REGULATORY MACHINERY

In the United States responsibility for the regulation of public utilities is shared jointly by legislatures, public service commissions, and the courts, with municipalities undertaking a limited measure of regulation in some states. Recently the federal government has assumed increasing responsibility in the supervision of public utilities. Little use has yet been made of direct managerial control of utility undertakings, though the Tennessee Valley Authority may be looked upon as an attempt at control from within the managerial group, in contrast to the more normal control from without the corporation. The more conventional forms of public ownership may also function as control devices, as a yardstick to influence private companies to meet the standards attained with respect to both charges and services.

PRE-COMMISSION REGULATION. *Competition.* Commission regulation grew out of the experience, for the most part unsatisfactory, with earlier forms of control. Competition was the earliest form of regulation, which, it was assumed, would protect the consuming public by assuring low charges and adequate service. Thus charters were freely granted for the construction of competing railroads, and for two or more companies supplying gas, electricity, and local transportation services in many larger cities. In New York City the Consolidated Gas Company was formed in 1884 through a merger of six companies that had been supplying gas in that city.

Competition between utility companies may assume many forms. In its most dramatic aspect, price competition usually degenerates into cutthroat competition, since utility companies are characteristically subject to decreasing costs per unit of service as the volume of business increases.

It may perchance happen that rivalry will not take the form of price competition; impressed with the dangers of a price war, both managements may seek to increase their volume of business by less hazardous methods. Extensions of the service may be undertaken into territory where the volume of business is insufficient to cover the costs. Large sums may be spent in attempts to improve the service. Special inducements may be offered to win and retain patronage: the free wiring of homes, the supplying of appliances at reduced prices or without charge, free service on existing appliances, or unduly favorable credit terms on purchases of equipment.

Competition as a technique of control for public utilities has proved incapable of protecting the public interest. Where the community is capable of supporting two companies rendering the same service, the costs of that service are inevitably greater for two companies than for a single organization. Competition imposes a wasteful duplication of capital facilities and uneconomic utilization of capacity. Similar duplications in managerial personnel

and operating staffs increase operating expenses. In many instances the higher costs result in poorer service than could be rendered by a single company. Even apart from costs, service by competing utilities tends to be poorer: the undesirability of subscribing for two telephone services in order to reach all subscribers requires no comment; limitations on transfer privileges in local transit service are a nuisance to the patrons; and even electric and gas companies, under competitive conditions give less protection against interruptions to service. The mere provision of duplicate distribution facilities is a source of great public inconvenience, in the opening of pavements, the maintenance of duplicate tracks, and the placing of two lines of poles along the streets.

Rate wars have almost inevitably occurred whenever competing utilities have found themselves in an area unable to support both companies, and have often come even when a live-and-let-live policy would have been possible.¹ Though the consumer may seem to be the beneficiary of the rate war, his immediate gains usually prove costly to his long-term interests: insufficient funds for maintenance and replacements lead to deteriorations in the quality of the service; losses to investors adversely affect the investment character of utility securities, with a consequent increase in the future cost of capital; and if the investment character of the utility securities be sufficiently undermined, the capital requisite for the development of the service may not be available on any terms. A sometimes overlooked disadvantage of competition is the discriminatory practices that usually accompany the desperate efforts of the competitors to win additional business without sacrifice of any of the present earnings. Where rate wars are not continued to the ultimate exhaustion of the competing companies, the termination of the rate-cutting policies is usually attended by an agreement or merger with an attempt on the part of the companies to recover the losses sustained during the period when prices were at uneconomic levels.²

In contrast to competition, monopoly offers certain important advantages. Protection against the wastes and losses of competition enhances the investment character of utility securities, making it possible to secure capital at relatively low costs. Not only does the single utility company possess the economic advantage of a relatively smaller investment, but the greater diversity in demand for the service, incident to serving the entire community from a single source of supply, makes possible further economies in investment. A further saving is found in the smaller reserve capacity required to afford the same

¹ A dramatic illustration of cutthroat competition developing as a result of the establishment of duplicating facilities is provided by the experience of Shelby, Montana, a city with a population of 2,000. The Great Northern Utilities Co. was supplying natural gas at a charge of 60 cents per thousand cubic feet for the first five thousand; following the institution of a Commission inquiry, the rate was lowered to 50 cents. The Citizens Gas Co. was authorized to supply the same area, its schedule specifying a base rate of 35 cents per thousand. Within a month the loss of customers forced the Great Northern Utilities Co. to announce a new schedule with a base rate of 20 cents. Following an investigation, the Commission found the rate of 20 cents too low, and prescribed a base rate of 35 cents. The right of the Commission to establish the 35-cent rate as a minimum was sustained by the courts even though the unrefuted evidence established that at that rate the patronage would be insufficient to enable the two companies to realize a fair return. (*Comm. v. Great Northern Utilities Co.*, 289 U.S. 130-137 [1933].)

² Gray, "Public Utility Competition: A Case Study," 15 *Journ. of Land & Public Utility Econ.* 196-200 (May, 1939).

assurance of uninterrupted service. The economies in operating expenses may be expected to be as significant as the savings in capital costs. These economic advantages support the conclusion that efficiency in service and reasonableness in rates should generally be secured through other means than competition.

What has thus far been said might seem to lead to the questionable conclusion that competition in the supply of utility services is never justifiable. Where a company has displayed an indifference to the requirements of the consuming public, or is unable to supply satisfactory service, or is without the means of securing the funds necessary for essential extensions and improvements, a good case may exist for permitting the entry of a new utility into the area. Permission for the establishing of a competing utility should not, however, be given if it is possible for the regulatory authorities to require the existing utility to render adequate service; but if the existing utility is incapable of discharging its duties to its consumers, then a *prima facie* case is established for the launching of a second utility.

The case against competition rests upon the assumption that regulation can be effective in establishing rates just sufficient to cover the necessary costs of an efficiently operated utility. If a monopolistic company is able to charge high rates, either with the acquiescence of regulatory authorities or despite efforts to secure rate reductions, the continuance of the unnecessarily high rates may prove more costly to the community than competition. Public dissatisfaction with the accomplishments of regulation in reducing rates has caused a recent revival of interest in the possibilities of competition as a device to assure reasonable rates, and experience in some communities—for example, Cleveland, Seattle, and Montreal—has demonstrated competition's efficacy in reducing rates without deterioration of service standards or financial losses to investors.³

Judicial regulation on a common-law basis. Public utilities, even in the absence of legislation prescribing their duties, are subject to a common-law obligation to render adequate service at reasonable prices and without discrimination. A correlative right of consumers to demand adequate service at reasonable rates has been recognized in the adjudication of disputes involving the price to be paid for service rendered by such companies.

Almost everywhere reliance upon the courts to protect the interests of consumers proved inadequate, and hence judicial control has been superseded by positive legislative action. Many factors contributed to the inadequacy of judicial regulation. Courts exist to resolve disputes; their primary function is to provide a remedy for past wrongs rather than to prescribe standards for future conduct. The judicial procedure is too costly and, with the crowded dockets that characterize most courts, too time-consuming to be within the reach of the average individual. Though the charges of a utility may be quite excessive in the aggregate, the possible gain to the individual is too insignificant to launch any but the very large, or the quixotic, consumer upon such expensive and uncertain litigation. Furthermore, the judiciary is not composed of men with the technical competence, experience, and information requisite for sound judgments in the regulation of utility enterprises. Fi-

³ See Chapter XXIV.

nally, the most serious weakness lies in the nature of the judicial process, which permits only the settlement of specific cases, though the situation may require continuous regulation to establish fair rates and adequate service.

Legislative control. Legislative regulation assumed many forms before the commission became the generally accepted mechanism of control. Direct legislative control has been attempted through the granting of franchises and charters, through restrictive provisions in general incorporation acts, and through statutes defining the obligations of public utilities. The characteristics of each form of control may be briefly examined.

The characteristics of franchises and their regulatory features is the subject of a more extended consideration in Chapter VII.

The incorporation of local utilities by special act of the legislature carried with it the possibility of conflict between the jurisdiction of the state and local governmental units. It became customary to make the franchise operative only with the authorization of the local authorities. The charter would specify the area within which the corporation's activities could be carried on, and perhaps establish the general standards governing the activities of the corporation.

The granting of charters by special act of the legislature imposed such a heavy burden upon the legislatures and led to so much log-rolling and political corruption⁴ in an effort to secure special privileges and advantages from the legislature that it finally became customary for the legislatures to pass self-denying statutes forswearing the special incorporation of businesses and requiring all who would secure corporate charters to submit their applications to a designated state official to determine whether the applicants conformed to the standards prescribed. Under such charters there was little opportunity to provide any significant measure of control, and the reliance upon such general incorporation laws could be justified only on the assumption that the real controls would be exercised by the forces of competition.

In time the general incorporation laws were supplemented by the requirement that the company secure a special authorization to engage in a public utility undertaking. This franchise is generally designated a certificate of convenience and necessity. Since the certificate of convenience and necessity is a development of the period subsequent to the establishment of the commission, it has not been an independent instrument of control, but has enabled the commission to exercise a measure of supervision over the utility enterprise from its inception.

Historically the franchise granted by the local authorities has been the most important of the franchises for the purposes of control. The right of the municipality or other local government unit to control the issuance of franchises has been a correlative of their power to police the public streets. The regulatory features of the local franchise have included a definition of service standards, the prescription of rates, and the exaction of a payment for the franchise privileges. Payments for the franchise privileges have frequently been required in the form of lump-sum contributions to the municipal treas-

⁴ See Charles F. Adams, Jr., chairman of the Massachusetts Board of Railroad Commissioners, in "Railway Problems in 1869," 110 *North American Review* 116, 126-127, (Jan., 1870).

ury, the payment of annual fees, the paving of the streets and other work associated with their maintenance, or the provision of free services to the community.

The unsatisfactory character of franchise regulations is the subject of consideration elsewhere.⁵

The inclusion of regulatory features in the general incorporation acts was intended to supplement the controls of competition, and to meet the more obvious abuses associated with the granting of charters and the financing of utility companies. Without specific machinery for enforcement, these regulatory features proved ineffective to assure adequate service, reasonable charges, or honest financing.

In the Middle West the Granger agitation brought about renewed efforts at the control of public utilities through the passage of restrictive legislation. These laws sought to prescribe maximum rates, to outlaw various forms of discrimination, to require improved service, and to correct the abuses of corporate financing. In some of the eastern states attempts at statutory control began in the second quarter of the nineteenth century and persisted for many years. As early as 1831, Massachusetts had reserved the right to amend the charter of any corporation created under its laws;⁶ and five years later, it legislated that, although the rates of railroads should be fixed in the first instance by the directors, these fares should be subject to modification by the legislature, though without the consent of the corporation rates were not to be reduced so as to leave the corporation an annual profit of less than 10 per cent.⁷ Similar regulations were extended to the street railways. By 1864 the necessity for enforcement procedures was more clearly understood, and hence the statute provided that on the receipt of a complaint from certain public officials or fifty voters, the Supreme Judicial Court should appoint a special three-man commission which should investigate and make any necessary revision in fares, the report of the commissioners, when confirmed by the court, to be final for one year.⁸

Many and grave were the defects associated with the attempt of the legislatures to control public utilities directly by statute. There was an inescapable shortcoming in the lack of the specialized knowledge and experience. Since legislatures are political bodies, it was but natural that the members should be sensitive to political rather than economic considerations, with the result that the laws enacted were sometimes poorly calculated to protect the long-term interests of the public in the adequacy of the utility service. Moreover, successful regulation must be a continuing process; there must be available at all times a regulatory agency with the power to act promptly as conditions change. The legislatures, with their infrequent sessions and their inevitable preoccupation with a multitude of other responsibilities, could give only delayed consideration to new problems as they arose. Regulation must be capable of recognizing variations in the requirements of different communities and corporations, and of modifying the application of general principles ac-

⁵ Chapter VII, Sec. 1.

⁷ Mass., *Revised Statutes of 1836*, c. 81.

⁶ Mass., *Acts of 1831*, c. 81.

⁸ Mass., *Acts of 1864*, c. 229, Sec. 26.

cordingly. But legislatures lacked both the time and the competence to fit the pattern of control to particular conditions. And finally, direct regulation by the legislature was defective in enforcement; enforcement through the courts was too time-consuming and costly to be available to the individuals who, as consumers or investors, were injured by the departures of utility conduct from the statutory standards of conduct. Even when the legislatures were aided by advisory commissions appointed to observe the operation of the regulatory statutes and to supply the legislatures with technical advice, control through statutory standard and injunction proved ineffective.

COMMISSION REGULATION. Commission regulation represents a development in governmental machinery indigenous to this country. The ultimate source of the regulatory power is still the legislature, but the legislature, instead of exercising its power directly, delegates its regulatory authority to an especially constituted administrative agency which proceeds to carry out the declared policy in accordance with the standards and procedures prescribed by the legislature. It is the function of the commission to interpret the general principles of the statute in the light of the requirements of the particular utility and community, to exercise continuing supervision over the operations of the companies subject to its jurisdiction, and to report to the legislature on the effectiveness of the existing controls and on the possibilities of improvement. The origins of commission regulation are to be found in the failure of the alternatives.

The superiority of the commission over the alternative methods of regulation is observable in several respects. The personnel of the commission is presumably selected on the basis of the technical qualifications of the individuals to resolve the problems of utility regulation. By devoting full time to the duties of their office, it is expected that the commissioners may develop skill through experience in dealing with the problems of control. In addition to such special qualifications as the commissioners themselves bring to their tasks, the staff of the commission is presumably composed of individuals trained in engineering, accounting, and the law to handle the technical questions of regulation. A further advantage is that the commission exercises continuous supervision, and is in a position to act promptly with respect to those questions which require immediate consideration. It is basic to the theory of commission regulation that the commission shall be a nonpolitical agency, and in some states provision is made for bi-partisan membership. In contrast to regulation through the courts, the commissions provide an informal, inexpensive procedure by which consumers and others may secure a ready redress of their legitimate grievances with respect to the conduct of utility companies. Where the courts are concerned largely with disputes involving past wrongs, the commission's functions are preventive and oriented toward the future; the commission is primarily responsible for the establishment of standards, rules, schedules of charges, et cetera, to be followed thereafter by the companies.

Growth of state commissions. The historical development of regulatory commissions falls into three periods: the period before 1870 may be designated

as the period of the advisory commission; from 1870 to 1907, as the era of the railroad commission; and from 1907 to the present, as the period of the public service commission.⁹

The commissions that were established in the period prior to 1870 were less administrative than advisory in their functions. The leading utilities of this era were the railroads. Beginning as early as 1836, Massachusetts required railroads to submit annual reports to a committee of the legislature. These early commissions were found first in the states in the northeastern part of the country, and were established by Rhode Island in 1836, by New Hampshire in 1844, by Connecticut in 1853, by New York and Vermont in 1855, and by Maine in 1858. The first Massachusetts commission was a short-lived venture, created under a statute of 1845 which was repealed the next year.¹⁰ An attempt to revive the commission in 1847 failed, and it was not until 1864 that a board of railroad commissioners with very limited powers and duties was created.¹¹

In 1869, Massachusetts established a new Board of Railroad Commissioners which, like the New York Commission of 1855, possessed somewhat larger powers than the other commissions of the period, and may serve to illustrate their nature and functions.¹² The original personnel of the Board consisted of "one engineer, one representative of the active business interests of the community, and one person of legal training to act as its mouthpiece, and to attend to its legislative duties." The Commission was given general jurisdiction over all railroads, with the responsibility of investigating all complaints and recommending appropriate changes in railroad practices. It also investigated violations of the laws and reported thereon to both the railroads and the legislature. The Commission had extensive powers of investigation relative to the condition, management, and operations of the railroads of the state; all annual reports of the railroads were addressed to the Commission, which was empowered to examine the companies' books to ascertain if they were kept as prescribed; and the Commission was required to investigate and report on all accidents. This early Massachusetts Commission is a good example of a "weak" commission, since it had no power to enforce its recommendations; if the railroads did not voluntarily comply with the Commission's recommendations, the only resort was to publicity and, in the last resort, to the introduction of remedial legislation with respect to the conditions requiring correction. That the Commission was able to discharge its public responsibilities is a tribute to the ability and intelligence of the Commissioners,¹³ but even in Massachusetts regulation through recommendations and publicity proved less than satisfactory with the passing years, and when in 1885 the

⁹ Railroad commissions appeared in some states prior to 1870, and some public service commissions already existed in an era otherwise dominated largely by the activities of the railroad commissions.

¹⁰ Mass., *Acts of 1845*, c. 252; *Acts of 1846*, c. 190.

¹¹ Mass., *Acts of 1864*, c. 152.

¹² See White, "The Origin of Utility Commissions in Massachusetts," 22 *Jour. Pol. Econ.* 177 (Mar., 1921).

¹³ See a statement by the chairman, Charles F. Adams, in Massachusetts, House document 225 of 1879.

Board of Gas Commissioners was established, the new commission was given extensive mandatory powers.¹⁴

From 1870 to 1907 was the period of the railroad commissions. Following the lead supplied by the Granger movement, many states established strong commissions with mandatory powers for the control of railroad companies. The movement for the extension of governmental control over railroads came to a climax in 1887 with the passage of the Interstate Commerce Act asserting federal jurisdiction over the interstate steam railroads and creating the Interstate Commerce Commission. Although regulation was concerned primarily with the prevention of extortionate rates and discrimination in either rates or service, commissions were gradually given extensive jurisdiction over other aspects of railroad operations.

Though the period from 1907 to the present time has been designated the era of the public service commission, the first commission regulation of gas and electric utilities came in 1885, with the establishment of the Board of Gas Commissioners in Massachusetts.¹⁵ This new Commission represented the first recognition of the dual responsibilities of the modern commission to protect both the utility and the consumers. The Commission had relatively extensive duties: it could prevent competition between like utilities and the duplication of facilities; it was required to investigate complaints relative to the price or quality of the service, and it could order rate reductions or improvements in service; and it could require reports and annual returns from the companies. It was a characteristic of early regulation in Massachusetts that the companies were assessed to cover the expenses of the regulatory commissions.¹⁶

The development of regulation in the contemporary meaning of the term dates from 1907, when New York and Wisconsin reorganized their commissions with broad powers of supervision and regulation with respect to all aspects of utility operations. At present all states with the exception of Delaware have their public service commissions exercising more or less effective control over all utility activities. The jurisdiction and responsibilities of contemporary public utilities commissions will be discussed in subsequent sections of this chapter.

2. THE LEGISLATURE

The earlier discussions of the right to regulate have developed the constitutional basis for the legislature's powers respecting utility corporations.¹⁷

¹⁴ Mass., *Acts of 1885*, c. 314.

¹⁵ Mass., *Acts of 1885*, c. 314. In 1887 the Commission's jurisdiction was extended to electric utilities and its name changed to the Board of Gas and Electric Light Commissioners. (Mass., *Acts of 1887*, c. 382.) The Public Service Commission was created in 1913 (Mass., *Acts of 1913*, c. 784) to replace the Board of Railroad Commissioners, which had proved incapable of coping with the increasingly serious problems of railroad regulation without extensive additional powers. In 1919 the Board of Gas and Electric Light Commissioners and the Public Service Commission were merged into the newly created Department of Public Utilities. (Mass., *Acts of 1919*, c. 359, Sec. 117.)

¹⁶ For a brief discussion of the development of the Massachusetts regulatory commissions see Barnes, *Public Utility Control in Massachusetts*, Chapter I.

¹⁷ Chapters I and V.

Under the present scheme of control, the legislature is the policy-making body; it decides on the extent and the character of regulation; it creates and empowers the agencies through which its policies are effected; and, from time to time, it weighs and assays the results.

The authority of the legislature may be exercised directly through charter and statutory provisions. It may be manifested through the judiciary and the officers of the courts. More likely, control is effected through the public service commission and the municipalities. But whatever the form and the direction of control, it must be recognized that any judgment with respect to the adequacy or inadequacy of control is essentially a judgment as to the success of the legislature in the discharge of one of its principal responsibilities to the community.

3. THE COMMISSION

GENERAL CHARACTERISTICS OF THE REGULATORY COMMISSION. The nature of commissions and commission regulation has been suggested in the sketch of the historical development of this form of regulation. The commission is an administrative body exercising legislative powers under a broad delegation of authority. Historically, the commission has been concerned with the matters of reasonable charges and adequate service, but in the process of imposing increasing responsibilities on industries subject to regulation, the powers and duties of the public service commissions have been expanded until they embrace all aspects of utility activities.

In the light of the theoretical separation of powers which is so frequently assumed in discussions of American governmental institutions, the characteristic public service commission appears to be an anomalous type of governmental organ, some of its activities being legislative, some judicial, some administrative. In its application of the general principles prescribed by the legislature to the particular utility, the commission is acting in a legislative capacity. Thus in the establishment of rules of conduct for the future and in the fixing of reasonable rates and the standards of service, the commission is legislating for the industry, and thereafter violations of the commission's orders are analogous to an infraction of legislative rules and regulations. Commissions also have occasion to act in a judicial capacity: for example, if the commission determines that past rates have been unreasonable and (assuming the statutes make provision for reparation) orders that reparation be paid, its order is judicial in character. Similarly, when it entertains complaints from consumers as to the conduct of a utility and after investigation and hearing issues a corrective order, the commission is performing functions which were once exercised by the courts. In its supervision of the accounts of companies, in its examination of reports, and in its supervision of the extent to which the companies under its jurisdiction are complying with the requirements of statute and order, the commission functions are primarily administrative.

THE COMMISSIONERS. *Size of the commission.* The three-man commission is much the most common throughout the country. As of 1939, thirty-seven

of the forty-eight commissions were composed of three members;¹⁸ eight of the states had commissions of five;¹⁹ South Carolina had a commission of seven; while Oregon and Rhode Island entrusted their regulation to a single commissioner. It is interesting to note that the federal commissions tend, as might be expected, to be larger: the Federal Trade Commission, the Federal Power Commission, and the Securities and Exchange Commission each have five members; the Federal Communications Commission has seven; and the Interstate Commerce Commission, eleven. Though still a matter of considerable moment, the size of the commission is not now of the same importance as it was before the development of substantial expert staffs. The commission of three or more affords an opportunity to bring together individuals of quite different training and experience. Also, the larger commission practically guarantees the explicit discussion of the considerations for a particular line of action and affords opportunity for the exploration of the available alternatives; whereas if the responsibilities of regulation are imposed on a single commissioner, decisions may be formulated without that thorough canvassing of the situation which is presumably inevitable where there is a meeting of several minds. The larger commission may make possible the more expeditious determination of all cases, since there is the possibility of a certain division of labor. With the multiplication of the responsibilities of the commissions the advantages possessed by such an arrangement are obvious: the members of the commission have more time to devote to matters of major importance; the commission's work, especially matters of detail, may be expedited; and more time is available for the presentation of cases of lesser importance before the individuals rendering the decision in the first instance. It is significant that the Interstate Commerce Commission, one of the oldest regulatory bodies, has progressed from the division form of organization to the outright delegation of authority to individual commissioners to dispose of matters specifically assigned to their division.²⁰

The designation of commissioners. The methods by which commissioners are selected has a significant effect upon the caliber of the commissions and the effectiveness with which they discharge their responsibilities. In 1939, thirty of the forty-eight commissions were appointed to office, the appointment commonly being by the governor with the advice and consent of the senate.²¹ The members of the commissions of sixteen states were elected by popular vote,²² while in two states (South Carolina and Virginia) the commissioners were elected by the general assembly.

¹⁸ All the states except Delaware have commissions; that of the District of Columbia is the forty-eighth.

¹⁹ California, Georgia, Illinois, Massachusetts, Michigan, Missouri, New York, and Pennsylvania.

²⁰ 47 Ann. Rep. I.C.C. 32-33 (1933).

²¹ Chart 5, *Utility Regulation Chart* (pp. 205-217). See also Ruggles, *Aspects of the Organization, Functions, and Financing of State Utility Commissions*.

In the District of Columbia, the members of the Commission were appointed by the President; in Nevada, by the Public Service Board; in North Carolina, the chairman was elected by popular vote while the two associates were appointed by the governor; in Rhode Island, the Chief of the Public Utility Division was appointed by the Director of Revenue and Regulation who was himself appointed by the governor.

²² Alabama, Arizona, Florida, Georgia, Iowa, Louisiana, Minnesota, Mississippi, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Tennessee, and Texas.

The selection of the chairman may be a matter of considerable importance if the position is other than an honorary one. In a majority of the states (twenty-eight), the selection of the chairman is left to the commission itself, and there is a distinct tendency for custom to develop a rotating chairmanship that is purely honorary; indeed, the Virginia statute provides specifically for a rotating chairmanship. The chairmen of thirteen commissions are designated by the governor.²³ The five federal commissions chiefly concerned with the regulation of business are all appointed by the President, with the consent and advice of the Senate; with the exception of the Federal Communications Commission whose chairman is designated by the President, each commission selects its own chairman.

There is no method of selection which will guarantee obtaining men with the highest qualifications for the public service commissions. It may be said, however, that the election of public service commissioners is scarcely designed to secure the men best qualified. The men who are best qualified by training and experience to discharge the exacting duties of commissioners are unlikely to be suited by either ability or inclination to undertake political campaigns to win office; nor should the commissioner who is in office be under the necessity of interrupting his work to endure the fatigues and frustrations of a political campaign; and most important of all, the members of the commissions should be above politics, indifferent to the political aspects of the cases that come before them and independent of the political favors and enmities of corporations and consumers alike. It may, therefore, be asserted that the appointive method is better calculated to secure satisfactory commissioners if the appointing official—for the state commissions, usually the governor—is above political considerations in designating men to this important office. An additional assurance of the appointment of properly qualified commissioners might result from the establishment of an unsalaried advisory council, composed of individuals competent to judge the qualifications of prospective commissioners, which could prepare or approve a list of qualified persons from which the appointment should be made.

Qualifications of commissioners. Since in most states the members of the public service commissions are not selected by the legislatures, it is not unnatural that the legislatures should establish certain specifications to which they desire commissioners to conform. A quite common requirement is that the commissioners should be residents or citizens of the state. This stipulation limits the range of choice and frequently prevents securing the most competent individuals. It also discourages career men who might be attracted by opportunities for promotion from the smaller commissions to the larger and more remunerative regulatory bodies, and impedes the development of professional standards.

One of the earliest limitations on the selection of commissioners was the requirement that the commission include individuals trained in engineering,

²³ Colorado, Illinois, Maine, Maryland, Massachusetts, Missouri, New Hampshire, New York, Ohio, Pennsylvania, Vermont, Washington, West Virginia.

In the remaining seven states the chairman is selected in a variety of ways: in Idaho and Kentucky, the senior member is the chairman; in Alabama and North Carolina, the chairman is elected by popular vote; while in Oregon and Rhode Island there is only a single commissioner.

law, accounting, or business. However, with the development of sizeable commission staffs, including among their number accountants, engineers, and attorneys, the requirement of specialized competence by the commissioners becomes less significant than securing men of broad understanding, keen insight, and sound judgment.

A large majority of the statutes are specific in forbidding commissioners to have any official connection with, or pecuniary interest in, the utilities subject to the commission's jurisdiction. The reasonableness of such regulations none would deny. Even if commissioners could be completely oblivious of financial interests in companies subject to their control, the general public would not be equally certain of their disinterestedness, and the confidence of the public at large in the fairness of regulatory tribunals is essential to their effective functioning. A few of the states require that commissioners shall have no pecuniary or other interest in utilities either within or outside the state, a quite reasonable requirement considering the development of holding-company systems. It is, of course, appropriate that the commission and their staff should be estopped from accepting gifts, directly or indirectly, from the companies subject to their jurisdiction. The statutory prohibitions against financial interests in utility companies should probably be extended to members of the immediate family of the commissioner. A small minority of the states specify that the members of the commission shall not recommend others for employment in companies subject to commission control. The impropriety of public officers' being under obligation to those with whom they have official relations supports the wisdom of this requirement and recommends its adoption by all states. One very obvious gap in the statutory provisions governing the relations of the commissioners to the companies they regulate is the failure to prohibit a commissioner from accepting employment with a public utility for a term of years, perhaps five or more, after leaving the commission. In the past some commissioners have found lucrative employment with utility companies which they had previously regulated. Here is a most insidious influence, for a commissioner who, even subconsciously, desires employment with a utility corporation will scarcely fail to reflect the viewpoint of the utility managements.

In nearly all states the members of the public service commission are required to take the same oath of office that is required of other public officials. In a few of the states an additional oath, relative to the individual's qualifications for his position, is required.

Approximately half of the state statutes exclude a commissioner from any other public office during his incumbency; and in a few states he is not permitted to hold other public office for a specified period after terminating his connection with the commission. A somewhat smaller number of states forbid members of their commissions to engage in political activity while in office. These regulations are presumably based on a realization that many of the cases coming before commissions have political implications, and that the judgment of the commission should be independent of political considerations of either a personal or party nature.

In a majority of the states not more than a majority of the commission may

be members of the same political party. While it is better that the agencies of government should be bi-partisan than partisan, it would be even more desirable if the commissions could be made completely nonpolitical.

The tenure of commissioners. Since there is no specific training for commissioners, unless it be an apprenticeship on the staff of a commission, the matter of tenure is of considerable importance; most commission members are "trained by experience" on the job. As of 1939, the statutory term of office was six years for twenty-five of the commissions; for ten it was four years;²⁴ and for the remaining thirteen commissions, the terms varied from two years to indefinite appointments.²⁵ The members of the Federal Power Commission and the Securities and Exchange Commission are appointed for five years; the members of the Interstate Commerce Commission, the Federal Trade Commission, and the Federal Communications Commission, for seven years. In order to assure an experienced commission it is the accepted practice to provide an overlapping of the terms of office.²⁶

A short statutory term does not necessarily mean that the members of any given commission may not enjoy long incumbencies, for they may be regularly reappointed at the expiration of their terms; nor does the provision for a long term guarantee that any given commissioner will serve until the end of his term. A tabulation²⁷ of the average years of service of state commissioners

<i>Average Years of Service</i>	<i>State Commissions</i>
10 or more	Alabama, Tennessee
8 to less than 10	Connecticut, Maryland, Maine, New York, North Dakota, South Dakota, Texas, Utah, Wisconsin
6 to less than 8	California, Kansas, Massachusetts, Minnesota, Pennsylvania, South Carolina, Virginia, West Virginia
4 to less than 6	Florida, Louisiana, Mississippi, Montana, New Jersey
2 to less than 4	Arizona, Colorado, District of Columbia, Georgia, Idaho, Illinois, Indiana, Iowa, Michigan, Missouri, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, Ohio, Oklahoma, Vermont, Washington, Wyoming
Less than 2	Arkansas, Kentucky, Oregon, Rhode Island

as of 1935 presents significant evidence on this matter. This record of the actual years of service is a cause for pessimism. Exactly half of the commissions

²⁴ Alabama, Florida, Iowa, Kansas, Kentucky, Michigan, Mississippi, Nevada, North Carolina, and Oregon.

²⁵ Two years—Illinois, North Dakota, South Carolina; three years—Arizona, Arkansas, District of Columbia (except the engineer member, who serves for four years); five years—Massachusetts; seven years—Maine; ten years—Pennsylvania and New York; indefinite—Rhode Island. In Indiana and Washington the members of the commission continue in office at the pleasure of the governor.

²⁶ Only four states—Illinois, Michigan, Mississippi, and Washington—do not take advantage of this device. It has already been noted that there is only a single commissioner in Oregon and Rhode Island.

²⁷ Ruggles, *op. cit.*, p. 26.

show an average term in office of four years or less. Though there may be reasonable doubts whether even an able commissioner becomes a truly effective public servant within four years, it is certain that with any shorter term of office he is still in the learning stage. The circumstances responsible for the relatively high turnover in office among public service commissioners vary from state to state: changes in the political complexion of the state government, the relatively low salaries paid in some states, the use of the office as a stepping stone to more lucrative employment in the utility field—are all factors whose significance cannot be readily assayed.

Removal from office. In general, the statutes specify the causes for which a commissioner may be removed from office and the manner in which removal shall be accomplished. Although wide variations are encountered in the enumeration of the specified causes, the common causes for removal are neglect of duty, malfeasance, misconduct, inefficiency, incompetence, and misdemeanors.²⁸ In 1935, in eighteen states, a commissioner might be removed from office by the governor,²⁹ and in five other states by the governor and the legislature;³⁰ it is interesting to note that in all of these states, the commissioners were appointed to office.³¹ Removal from office was by impeachment in eleven states,³² in ten of which commissions are elected to office. In three states, removal from office was by court proceedings,³³ while in seven other states for which data were available a miscellany of methods prevailed.³⁴

Salaries. Along with security of tenure, the salary scale is the most important single factor in attracting competent individuals to serve on public service commissions. Despite this fact, thirty-two of the commissions paid salaries of less than \$6,000, and only six afforded salaries in excess of \$8,000. While there is no necessity that the salaries paid public servants equal those available in private employment, it is essential to pay salaries such that public employment—considering prestige, security of tenure, and personal satisfaction in doing an essential job—shall be as attractive as private employment. The specific salaries which will suffice to attract the best men into public office will vary with the times and with the section of the country. It would appear reasonable to expect that salaries of \$8,000 or more would secure competent com-

²⁸ Ruggles, *op. cit.*, pp. 24–30. Other statutory causes for removal from office, in the order of the frequency of their appearance, are: corruption, high crimes, intoxication, gift from or employment by utility, violation of qualification laws, moral turpitude, gambling, extortion, conviction of felony, active participation in politics, and favoritism or oppression in office.

²⁹ Arkansas, Florida, Idaho, Illinois, Indiana, Kentucky (subject to review by the courts), Maryland, Michigan, Minnesota, New York, Ohio, Oregon, Utah, Vermont, Washington, West Virginia, Wisconsin, Wyoming.

³⁰ Georgia, Maine, Massachusetts, New Hampshire, Pennsylvania.

³¹ In two other states, Nevada and Rhode Island, the statute provides for removal by the Public Service Board and the Director of Revenue and Research, respectively—the appointing agents.

³² Colorado, Iowa, Montana, Nebraska, New Jersey, New Mexico, North Carolina, North Dakota, Oklahoma, Texas, Virginia.

³³ Alabama, Connecticut, Tennessee.

³⁴ Arizona, by impeachment or recall; California, by the legislature; District of Columbia, no provisions; Kansas, by the courts or by recall; Louisiana, by impeachment or by the legislature; Mississippi, by impeachment or by the courts; and South Carolina, by impeachment or by the governor and the legislature.

missioners in almost any section of the country; ³⁵ except under unusual circumstances, salaries of \$6,000 or less demand too great a sacrifice on the part of well-qualified individuals with attractive alternatives.³⁶

COMMISSION BUDGETS. No satisfactory statistics are available regarding the annual cost of regulation. Such statistics would have to include not simply the aggregates in the commissions' budgets, but also the expenditures by legislatures and their investigating committees plus the expenditures by the companies, both in complying with the requirements imposed by regulatory authorities and in appeals to the courts. While the absolute magnitude of such figures would probably be startling to the uninitiated, they certainly represent a small proportion of the total cost of utility services. Moreover, there is reason to believe that total expenditures on regulation are less than required to afford really adequate protection to the public.³⁷

The funds with which commissions carry on their regulatory functions come partly from appropriations from the general funds of the state and

³⁵ The members of the Interstate Commerce Commission receive \$12,000; the members of the Federal Trade Commission, Federal Power Commission, Securities and Exchange Commission, and Federal Communications Commission, \$10,000.

³⁶ Salaries of Commissioners as of July, 1939:

Salary	Number of States	States *
\$10,000 or more	3	New York, \$15,000; New Jersey, \$12,000; Pennsylvania, \$10,000 (\$10,500).
\$8,000 to less than \$10,000	3	Connecticut, \$9,000; California, \$8,000; Virginia, \$8,000 (\$8,250).
\$6,000 to less than \$8,000	10	District of Columbia, \$7,500 (engineer member, \$9,000); Oregon, \$7,500; Massachusetts, \$7,000 (\$8,000); Michigan, \$7,000; Texas, \$7,000; Illinois, \$6,000; Indiana, \$6,000; Maine, \$6,000; Ohio, \$6,000; West Virginia, \$6,000.
\$4,000 to less than \$6,000	21	Missouri, \$5,500; Arkansas, \$5,000; Kentucky, \$5,000; Minnesota, \$5,000; Maryland, \$5,000 (\$6,000); Nebraska, \$5,000; New Hampshire, \$5,000; Oklahoma, \$5,000; Rhode Island, \$5,000; Tennessee, \$5,000; Washington, \$5,000 (\$6,000); Wisconsin, \$5,000; Georgia, \$4,800 (\$5,300); Louisiana, \$4,800; Arizona, \$4,500; Utah, \$4,200; Alabama, \$4,000 (\$4,600); Colorado, \$4,000; Florida, \$4,000 (\$4,500); Montana, \$4,000.
\$2,000 to less than \$4,000	10	Iowa, \$3,800; Wyoming, \$3,600; South Dakota, \$3,500 (\$4,500); South Carolina, \$3,400 (\$3,636); Mississippi, \$3,100; Idaho, \$3,000; New Mexico, \$3,000; Nevada, \$2,500 and \$1,000 (\$5,000); North Dakota, \$2,400; Vermont, \$2,000 (\$4,200).
Less than \$2,000	1	North Carolina, \$1,500 jointly for two, \$6,600 for chairman.

* A state is classified according to the salary of the majority of the commissioners. The chairman's salary is stated in parentheses if it differs from that of other members.

³⁷ The variations to be found in the appropriations for the different commissions may be suggested by a comparison of the budgets for the New York Public Service Commission, \$1,231,285, and for the Indiana Public Service Commission, \$292,135. (New York, *Laws of 1938*, Chap. 20, Appropriation Act, Department of Public Service, State Division. Annual Report of the Public Service Commission of Indiana, for the period ended June 30, 1937, pp. 661-664.)

partly from direct assessments against the companies subject to control.³⁸ In recent years there has been a tendency to provide for a larger measure of financing through assessments.³⁹ This trend has resulted from the urgent need for additional funds by the regulatory authorities and the difficulties in securing such funds from the general tax resources of the state, and from a feeling that those who benefit from regulation should bear its costs. Of course the assessments are included in the expenses of the utility company and passed on to the consumers.⁴⁰

Assessments fall into two categories: special assessments for particular investigations or special services performed for the utility companies, and general assessments to cover the general expenses of the commission. The taxation of utility companies for the expenses of regulation began with special assessments, one of the commonest occasions for assessing the utility being the testing of its meters on complaint of consumers (with the consumer paying the cost if the meter should prove not to be inaccurate). At present assessments are imposed in connection with the approval of security issues, investigations into rates and service, the valuation of the utility's property, and other particular manifestations of regulatory control.

Although assessments for the general expenses of the regulatory commissions have been utilized since 1882,⁴¹ this method of providing for commission budgets has become popular only during the past decade. Various methods of levying general assessments are to be found in the statutes: there may be a fixed percentage of gross intrastate operating revenues, a graduated levy based on gross intrastate operating revenues, or a fixed total sum apportioned among those subject to assessment. For example, in 1931, in addition to provision for the assessment of special investigations against utility corporations, Wisconsin provided for a "remainder assessment"—all expenses of the commission in excess of the total fees and special assessments collected during the year, to be assessed among the utilities subject to regulation in proportion to their intrastate gross operating revenues, the maximum annual assessment for any one company being $\frac{1}{6}$ of 1 per cent.⁴² It is customary for the statutes to fix the maximum assessments to which the companies are subject, either on account of special or general assessments. In some states the funds collected through these assessments are immediately available to the commission; in other states,

³⁸ See Ruggles, *op. cit.*, pp. 57-69.

³⁹ In 1940, twenty-three states assessed the companies for a part or all of the costs of regulation: Alabama, Georgia, Illinois, Indiana, Kansas, Kentucky, Louisiana, Michigan, Missouri, New Hampshire, New York, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming.

⁴⁰ It may be observed that the costs are not always borne by those who benefit; for example, it must be admitted that investors generally benefit substantially from commissions' control over security issued, but all the costs, if assessed against the company, are borne by the consumers. There is the possibility that some of the costs of regulation may fall upon the security holders if a company, previously enjoying more than a fair return, is not allowed to increase its rates by the amount of the assessment for regulatory expenses.

⁴¹ In 1882, South Carolina assessed the entire costs of its railroad commission against the railroads operating within the state, the assessment being in proportion to gross income, which was apportioned according to the track mileage within the state. (*General Statutes of 1882*, c. 40, Sec. 1453.)

⁴² Wisconsin, *Laws of 1931*, c. 183, 475.

the collections are paid into the state treasury and are available to the commission only after formal appropriation.

The constitutionality of the assessment method of financing utility regulation is clearly established. The validity of the assessment of the general expenses of regulation against the companies subject to control was established very early in the history of regulation.⁴³ Although statutes providing for the assessment of the costs of special investigations and services against the companies subject to regulation have been condemned in particular instances,⁴⁴ the special assessment method would seem to be thoroughly supported by federal and state authority.⁴⁵

COMMISSION STAFFS AND THEIR ORGANIZATION. The size and organization of the staffs of the different commissions vary widely from state to state. In 1935, the Vermont commission, for example, was reported as having no staff at all, while the New York commission had a staff of nearly four hundred.

The median size of the staff was 24; with clerical, stenographic, and miscellaneous unskilled employees included, 33. The size of the staff is determined by the adequacy of the commission's budget, the scope of the duties imposed on the commission, the number and organization of the companies subject to control, and the geography of the region in which the commission operated.

Two, or perhaps three, organizational schemes are to be found in use by public service commissions.⁴⁶ In all commissions, the commissioners themselves, their executive secretary, and a corp of clerical assistants constitute the administrative section, the central policy-making body and the source of ultimate responsibility. A substantial majority of the commissions organize their staffs according to functional lines; that is, sections are established to handle the legal, engineering, accounting, and research activities of the commission. The adoption of the functional organization does not preclude the creation of a number of sections to specialize in the problems of particular classes of utilities, and a substantial proportion of those commission staffs that are organized along functional lines have special sections devoted to motor transportation, railroads, or telephone utilities. A minority of the commission staffs adhere to the utility form of organization: such a commission might have a staff with one section devoted to the local utilities—electric, gas, and water, another responsible for the railroads, motor carriers, and local transit companies, and a third concerned with telephones. Where organization on a utility basis prevails, each such section would require its own attorneys, examiners, engineers,

⁴³ *Charlotte, C. & A. Ry. Co. v. Gibbs*, 142 U.S. 386 (1892). In *Great Northern Ry. Co. v. Washington*, 300 U.S. 154 (1937), while upholding the constitutionality of a general assessment statute, the Court held that the state had not sustained the burden of showing that the sums collected from an interstate railroad did not exceed what was reasonably needed in its case for inspection and supervision service. It was on this point that the minority, Mr. Justice Cardozo, with Mr. Chief Justice Hughes and Justices Brandeis and Stone concurring, parted company with the majority, contending that "the burden is on the railroads to satisfy the court that what was contributed by them was more than what was expended for their account."

⁴⁴ *State v. Northwestern Elec. Co.*, 183 Wash. 184, 49 P. (2d) 9 (1935).

⁴⁵ *Morgan's Steamship Co. v. Board of Health, La.*, 118 U.S. 455 (1886); *Nashville, C. & St. L. Ry. Co. v. Alabama*, 128 U.S. 96 (1888); *Bronx G. & E. Co. v. Maltbie*, 268 N.Y. 278, 197 N.E. 281 (1935).

⁴⁶ See Ruggles, *op. cit.*, pp. 35-44.

and accountants in order to be prepared to perform all of the regulatory functions with respect to the companies subject to its jurisdiction.

The New York Commission is the largest of the state commissions. (Chart 4.) Its plan of organization follows both functional and utility lines: the administrative, legal, and engineering departments, as well as the divisions of valuation and of accounting and research, conform to the functional plan; while the transportation, power, telephone, and water bureaus are examples of the utility plan of organization. The chart for the New York Public Service Commission is particularly significant in indicating the distribution of the Commission's personnel with respect to the various functions and the relative costs (at least in terms of salaries paid) of different aspects of the Commission's activities. The New York Commission has the largest budget of the state commissions and has the best relative scale of salaries. Yet it must be obvious from the most casual inspection that highly responsible tasks are entrusted to individuals whose salaries are in no way commensurate with the importance of the tasks they perform.

The relative desirability of the functional and utility forms of organization will depend upon the scope and emphasis of the commission's regulatory activities. As railroad commissions expanded their jurisdiction to include local utilities, it was both feasible and economical to add a new section to the staff to handle the new and different problems of the local utilities. But with the growth in the scope of regulation to cover substantially all of the utility organizations operating within a given state, the functional type of organization acquires distinct advantages: the personnel is more flexible in expanding and contracting to meet changes in the activities of the commission; the duplication of specially trained personnel in the different sections of the staff is avoided; the level of technical competence demanded by the work of the commission is reduced—for example, with the organization of the staff by utilities, each section must have accountants as competent as the chief accountant of the commission, while with the functional organization a single highly trained and competent accountant can effectively direct the work of a large accountant staff, handling all new, complex, and unique problems himself.

The effectiveness with which commissions function depends not alone on the competence of the commissioners and the size of their staffs; much depends on the competence of the individual staff members. Although a substantial majority of the staff members of the commissions report some experience prior to their work with the commission, that experience is not always of significance for their work with the commission; like the commissioners themselves, the staff members are to a considerable extent trained on the job. The average term of service with the commission is therefore a matter of significance. The average number of years' service, on the basis of a 1935 study, appeared to be approximately $7\frac{1}{3}$ years, a somewhat longer term of service than that of the average commissioner.⁴⁷ This overall figure is not completely satisfactory as an index of experience of the staff; it matters little to the smooth functioning of the commission if there is a relatively high turnover among the junior members of the staff; the efficiency of the commission would, however,

⁴⁷ Ruggles, *op. cit.*, p. 40.

be adversely affected if investigation should reveal a relatively short term of service among the key members of the staff.

In most of the states the members of the commission staff are selected by the commission itself; it is probably desirable that the commission should be thus directly responsible for the quality of its own staff. In only a handful of the states is the selection of commission employees guided by civil service requirements.⁴⁸ In general, commissions are handicapped by the relatively meager salaries which they are able to pay their staff members. Where the average salary is \$2,400 and the median salary is \$2,180, excluding unskilled miscellaneous, clerical, and stenographic employees, the comparatively more remunerative employment with utility companies must seriously limit the choice open to the commission.⁴⁹ Before the most competent individuals can be attracted to the public service, it will be necessary to pay salaries more nearly commensurate with those that are available from private employment, and the public servants will have to be given the security that goes with civil service tenure.

JURISDICTION OF PUBLIC SERVICE COMMISSIONS. *Utilities subject to commission control.* The Utility Regulation Chart provides an analysis of the extent to which the commissions had jurisdiction over the common utilities in 1940. It has already been noted that Delaware has no regulatory commission. Electric power utilities are regulated in forty-one jurisdictions.⁵⁰ Gas companies are subject to commission control in forty-two of the states.⁵¹ Telephone and telegraph corporations are within the jurisdiction of forty-four of the commissions.⁵² And water utilities are under commission supervision in only thirty-nine of the states.⁵³ Only two states fail to regulate motor vehicles operating as public service companies;⁵⁴ but only forty give their commissions supervision over street railways,⁵⁵ and forty-one, over interurban railways.⁵⁶ Pipelines are part of the commission's responsibilities in twenty-seven of the states.⁵⁷

The scope of commission jurisdiction. The scope of the jurisdiction which the commissions exercise with respect to the details of regulation will be analyzed when the different aspects of regulation are discussed in detail in the

⁴⁸ Colorado, Maryland, Massachusetts, New York, Ohio, Utah, Washington, and Wisconsin.

⁴⁹ Ruggles, *op. cit.*, p. 43.

⁵⁰ No jurisdiction over electric companies exists in Florida, Iowa, Minnesota, Mississippi, South Dakota, and Texas. The Nebraska Commission has only limited jurisdiction.

⁵¹ No control is lodged in the commission in Florida, Iowa, Minnesota, Mississippi, Nebraska, and South Dakota.

⁵² In the District of Columbia, Michigan, and Minnesota only telephone companies are controlled; in Iowa and Texas, the commission has control over neither telephone nor telegraph companies.

⁵³ No commission jurisdiction exists in District of Columbia, where the service is supplied by the municipality, nor in Florida, Georgia, Iowa, Kentucky, Michigan, Minnesota, Mississippi, Nebraska, New Mexico, South Dakota, and Texas.

⁵⁴ Kentucky and Maine.

⁵⁵ Arizona, Florida, Iowa, Minnesota, New Mexico, South Dakota, Texas, and Wyoming are the exceptions.

⁵⁶ Arizona, Arkansas, Kentucky, Montana, New Mexico, South Dakota, and Wyoming compose the minority.

⁵⁷ New York regulates only gas pipelines. In twenty of the states no commission jurisdiction exists.

following chapters. For the present a very generalized picture may be obtained by considering the extent to which the electric and gas utilities were subject to control by the different commissions. Regulation of utilities may begin with the inception of the utility organization, or at least before the corporation is allowed to enter upon the public service. In twenty-nine states, utilities were required to obtain a certificate of convenience and necessity from the commission as a prerequisite to engaging in a utility service. Provision was made for terminable permits or indeterminate franchises in eighteen states. Many states require that their utilities obtain the authorization of the commission prior to entering upon construction programs.

Since the assurance of reasonable rates and the prevention of discrimination are fundamental, utility regulation may not be said to exist in the absence of control over rates. It is therefore surprising that in 1940 in six states the commissions had no control over the rates of electric and gas corporations, while in two other states the jurisdiction was limited.⁵⁸ In thirty-odd states the commissions were specifically given statutory authority to change existing contract rates. Under the prevailing methods of rate regulation, the valuation of utility properties tends to be an integral part of the machinery of rate regulation. While it might be assumed that the power to make valuations would be implied from the power to regulate rates, there were many states whose statutes specifically provided that the commission might make valuations.

The supervision of utility accounts is necessary to provide the commission with indispensable information. In recognition of this, forty-one states gave their commissions power over the accounting practices of the electric and gas utilities.⁵⁹ The first step in the supervision of utility accounting practices is usually the adoption of a uniform classification of accounts. Yet there were ten states in which no uniform classification had been prescribed.⁶⁰ Uniform classifications for electric and gas utilities have been developed by the Federal Power Commission and the National Association of Railroad and Utilities Commissioners; and one or the other of these systems has been adopted in the majority of the states.

The active regulation of accounts requires commission examination of the reports of the companies, if not an actual inspection of the companies' books. It is essential that the commissions should have the statutory right to call for periodic and special reports from the corporations subject to their jurisdiction. In thirty-six of the states there were statutory requirements that such reports should be submitted by electric and gas companies.⁶¹ In thirty-one of the states, the commission had the statutory authority to call for special reports.

Some aspects of accounting control have appeared so basic to satisfactory regulation that special statutory provisions have been enacted in respect

⁵⁸ The commissions without authority were Florida, Iowa, Minnesota, Mississippi, Nebraska, and South Dakota. The Texas commission had jurisdiction over gas rates only, and in Ohio, the primary responsibility for the regulation of rates rested in the municipalities.

⁵⁹ Florida, Iowa, Louisiana, Minnesota, Mississippi, Nebraska, and South Dakota were the states without such provisions; Texas had this power only with respect to gas utilities.

⁶⁰ They were, in 1940, Arkansas, Delaware, Florida, Iowa, Minnesota, Mississippi, Nebraska, South Dakota, Texas, and Wyoming.

⁶¹ Texas required such reports of gas companies only.

thereto. Depreciation accounting has always been a source of controversy, and in thirty-nine of the states, commissions may regulate the rate at which depreciation expense shall be charged by corporations.

The regulation of the capitalization of utility corporations and commission supervision over the security issues of such companies is a relatively recent development in many states. In 1940, some provision for the control of the security issues and capitalization was to be found in thirty-one of the states. The completeness of the control varied widely from one state to another, so that it must be said that effective regulation of security issues was to be found in only a minority of the states.

The control of combinations and consolidations is closely related to the control over franchises and the regulation of security issues. In thirty-five states, some measure of regulation existed with respect to the consolidation of utility corporations. This control by the states has been effective principally in the matter of the acquisition of physical assets and the transfer of franchises. It has failed to reach the problems created by the acquisition of the voting stock of domestic utility corporations by holding companies located outside the state. This is one of those utility problems that requires the co-operation of the federal government.

Many disinterested authorities are of the opinion that municipal utility enterprises should be subject to control comparable to that which the commission exercises over privately owned corporations. Yet in 1940 only eighteen of the states provided for commission control over the rates and rate structures of municipal utilities. The service of such public undertakings was subject to commission jurisdiction in thirteen states. In the same limited number of states the control was exercised over the accounting practices of municipal utilities, despite the tendency for municipal authorities to be notoriously careless in their accounting records for municipal utilities. In a substantial majority of states the municipal enterprises were required to file reports with the state commission.

COMMISSION PROCEDURE. The procedures followed by commissions in their regulation of utility activities are the result of a process of evolution under the influence of the statutory limitations prescribed by the legislatures, the adverse and favorable decisions of the courts, and the attempts by the commission itself to adapt its methods to the tasks imposed on it.

The formal and informal procedures. Regulatory commissions, for greater efficiency and facility in dealing with their multiple responsibilities, have developed two procedures. The formal procedure is usually described in some detail in the statutes. The informal procedure has been developed to dispose of the vast volume of minor complaints and criticisms that come before the commission.

The formal procedure is necessary when the issuance of a mandatory order is required, and is commonly associated with the regulation of rates, mergers, intercorporate relations, and the issuance of securities. It begins with a complaint or petition, and there follow successively a preliminary investigation, a formal hearing, and the preparation of findings of facts; it concludes with a written opinion by the commission. Each of these may be briefly analyzed.

The initiation of a formal proceeding is usually specifically described in the public service law. Petitions for rate increases are usually started by the company. Complaints as to the reasonableness of rates may be instituted by a designated number of the consumers (in some states, one, in other states, twenty-five or more signatures may be required to initiate a rate case), or by certain public officials. Because of the high cost of carrying through a rate case (for the larger companies the costs to the complainant parties may rise to the hundreds of thousands of dollars), individual consumers seldom seek to initiate a rate proceeding unless assured that the commission will assume the responsibility of carrying the case to its conclusion. In the more progressive states, the commissions have long had the statutory power to begin proceedings on their own initiative, without waiting for a formal complaint. The commission is presumably engaged in the continuous supervision of the companies subject to its control and hence is in the best position to know when a revision in rates and charges may properly be required. For a commission with such statutory powers to await the formal complaint of consumers before starting a rate case is to fail in its most important duty to the public.⁶² In addition to enabling the commission to discharge more effectively its duty of protecting consumers, the power to initiate proceedings on its own motion makes it possible for the commission to widen and define the scope of a proceeding so as to make easier the attainment of sound and satisfactory conclusions.

The next step in the development of the case is the submission of the complaint to the utility. Prior to sending the complaint to the company, there may be a preliminary investigation by the commission's staff to determine whether there is a basis for the complaint. If the case is started by a petition from the utility for a change in its charges, the company will usually be required to accompany the petition with a summary of the data supporting its request.

The serving of the complaint on the company is accompanied by a request that the company submit its answer within a specified time. If the answer is satisfactory or establishes facts which remove the presumptions on the basis of which the complaint was submitted, the proceeding may terminate at this point.

If the proceedings are not closed by the company's answer, the hearing follows. All of the statutes provide for formal public hearings. Though commissions are not required to observe the formal rules which govern judicial hearings, it is essential to the constitutionality of the commission's conclusions that the amenities of "due process of law" be observed. However, the commission is not a judicial body, though some of its functions partake of a judicial

⁶² Many factors explain the relatively slight use which many of the commissions have made of this power to initiate cases. In some instances the commissioners have doubtless been indifferent to their public duties. In others the smallness of the staffs and the inadequacy of appropriations have made it impossible to do more than fulfill their routine duties and attend to such complaints as come in from consumers. Also, the commissions have been fearful of adverse decisions by the courts if they push the utility companies beyond the concessions which the companies will voluntarily concede. The costs and delays of judicial review are so excessive that many commissions quite reasonably conclude that they can serve their public best if they do not become involved in extended rate controversies; in such circumstances only flagrantly excessive rates are likely to lead to voluntary action by the commissions.

character; and its hearings are not intended to afford a forum where contesting parties come to present the facts and law to support their case. The purpose of the hearing is rather the assembling of all the facts that have any bearing on the matter before the commission; and if all of the significant facts are not presented by the parties to the case, it is the duty of the commission to direct its own staff in the assembling and presentation of the essential materials. The commission has the power to inspect the books and records of the utility, to subpoena witnesses, and to call for the production of any data in the possession of the company.

The hearing must be proceeded by notice to all interested parties. This requirement is usually specified in the statute, but it would be necessary in any case. "Due notice" requires that the parties to the proceeding shall have sufficient time to prepare their cases for effective presentation.

It is essential that the hearing before the commission be "full" and "fair," and a failure to observe the amenities of procedural "due process of law" in this respect will bring reversal and condemnation in the courts.⁶³ Indeed, Mr. Chief Justice Hughes has recently remarked that "a fair and open hearing" is "essential alike to the legal validity of the administrative regulation and to the maintenance of public confidence in the value and soundness of this important governmental process."⁶⁴ The fair hearing must afford both an opportunity to present evidence in support of one's case, and the right to hear and meet the evidence presented by others. It is also desirable that the parties to the proceedings should be informed of the nature of the commission's findings before the commission issues its final order; or if this privilege be not given, there should be a right to petition the commission for a re-hearing.

At the conclusion of the hearings, the commission may provide for the filing of written briefs by the parties in interest, and perhaps for oral argument before the commission. If the hearings have been conducted before an examiner of the commission, the examiner's summary of the evidence and his report to the commission may be submitted to all parties, who may thereupon file exceptions. If an examiner is used, it is not unusual for the filing of the examiner's report to be the occasion for the filing of briefs and oral arguments before the full commission.

The commission customarily prepares its report in writing, including in its opinion a summary of the evidence and the considerations which guided it to its conclusions. The commission has wide discretion in interpreting the evidence and determining the relative weight which the evidence should have in

⁶³ Mr. Justice Cardozo in *Ohio Bell Tel. Co. v. Comm.*:

"Regulatory commissions have been invested with broad powers within the sphere of duty assigned to them by law. Even in quasi-judicial proceedings their informed and expert judgment exacts and receives a proper deference from courts when it has been reached with due submission to constitutional restraints. . . . Indeed, much that they do within the realm of administrative discretion is exempt from supervision if those restraints have been obeyed. All the more insistent is the need, when power has been bestowed so freely, that the 'inexorable safeguard' . . . of a fair and open hearing be maintained in its integrity. . . . The right to such a hearing is one of 'the rudiments of fair play' . . . assured to every litigant by the Fourteenth Amendment as a minimal requirement. . . . There can be no compromise on the footing of convenience or expediency, or because of a natural desire to be rid of harassing delay, when that minimal requirement has been neglected or ignored." (301 U.S. 292, 304-305 [1937].)

⁶⁴ *Morgan v. United States*, 304 U.S. 1, 15 (1938).

its final determination. However, there must be sufficient evidence to support the commission's findings and its conclusions must not be contrary to the evidence.

The informal procedure is available wherever it is possible for the commission to bring a matter to a satisfactory conclusion on a consent basis or whenever it is not necessary for the commission to issue a mandatory order. The informal procedure is used largely in the handling of service complaints where the serving of the complaint on the company is usually sufficient to induce the company voluntarily to correct the condition complained of or to furnish a satisfactory explanation for the alleged deficiency. But the informal procedure may be employed for rate cases and other serious controversies between the commission and the utility companies.

The informal procedure is essentially a conference procedure. The utility is notified of the complaint and invited to make the appropriate adjustment. It sometimes happens that commissions, seeking to avoid the delays and costs and the possible judicial frustrations in cases aiming at rate reductions, resort to this procedure to win important rate concessions from the utility companies. It is the weakness of this procedure that it does not furnish the basis for the issuance of a mandatory order over the opposition of the company. If the utility and the commission can reach agreement,⁶⁵ and if the agreement is of such a nature as to protect the essential interests of consumers, this informal procedure possesses marked advantages. It is less costly; it avoids the delays that are an inevitable part of the formal proceedings under present conditions; it avoids the possibility that the results of the commission's work may be overturned by adverse court decisions. Without the informal procedure, the commissions could not possibly handle the volume of work which comes to them under the modern utility statute.⁶⁶

Criticisms of commission procedure. Many criticisms have been voiced of

⁶⁵ It is not necessary for consumers and other members of the public to agree with the commission; the commission is legally the representative of the public and may exercise its discretion respecting the bargain that is concluded with the utility managements. Of course, if the consumers resort to the formal statutory procedure—that is, the filing of a complaint signed by the requisite number of consumers—the commission is presumably required by the statute to begin a formal investigation into the reasonableness of the company's rates.

⁶⁶ The following tabulation is of the cases coming before the New York Public Service Commission from 1921 to 1928:

PROCEEDINGS BEFORE PUBLIC SERVICE COMMISSION, 1921-1928				
<i>Informal Cases</i>				
Year	Received	Disposed of	Received	Disposed of
1921 ¹	845	911	18,046	17,471
1922	888	890	13,623	14,007
1923	903	996	13,295	13,127
1924	866	800	11,408	11,296
1925	947	1,001	9,750	9,781
1926	993	888	11,012	11,055
1927	943	1,090	8,917	8,918
1928	987	1,019	7,488	7,399
Totals	7,372	7,595	93,539	93,054
Average yearly	921	949	11,692	11,632

¹ Includes First District Commission figures to April 2, 1921.

Source: New York, *Report of the Commission on the Revision of the Public Service Commissions Law*, Leg. doc. No. 75 (1930), Vol. IV, page 25. For more recent data, see New York Public Service Commission, *A Decade of Utility Regulation in New York State, 1930-1940*, pp. 227-247.

the conduct of public service commissions in their regulation of control of utility companies: (1) At present criticism concentrates on the merging of the duties of prosecutor and judge. (2) Many commissions have been criticized for their lack of initiative in beginning cases for rate reductions. (3) The adoption of a passive judicial attitude, leaving to other representatives of the public the task of developing the evidence to support complaints against unreasonable rates, is a serious failure in commission responsibility. (4) And there have been instances when commissions have been criticized for a lack of an impartial attitude.

Since the development of this form of regulation there have been periodic attacks upon the commission for combining the investigating and prosecuting functions with those of the judiciary. It has been said that those who prepare and present the case against the utility corporation are no longer impartial in pronouncing final judgment on the conduct of the corporation, and it has been proposed that the judicial functions of the commission be separated from the administrative functions and lodged with a separate governmental agency. In recent years, these attacks upon the alleged bias of commission determinations have been carried into the courts where those appealing from regulatory orders have sought to set aside commission rulings on the ground that they have been denied a fair trial.⁶⁷

The seriousness of this criticism may be exaggerated. No elaboration of the desirability of complete impartiality on the part of regulatory authorities is necessary. The commissions are representatives of the public interest, the whole public interest, not simply that of the immediate consumers. Their function is not to drive prices down for the short-term benefit of consumers, but to permit the company to obtain earnings sufficient to cover the costs of the service while protecting the consumers against unreasonable rates for an essential service. It is true that commission opinions sometimes betray an emotional tone, but the responsibility for that is usually to be found in some particularly gross example of a utility's indifference to its public responsibilities and the interests of the community. In the ordinary proceeding the commission is not an adverse party, seeking to win at all costs a victory over the utility corporation.⁶⁸ Furthermore, it should be noted that the commission is not normally engaged in deciding conflicts of interest and disputes that are finally determinative of property rights. The commission does not exist for the punishment of past wrongs or to resolve controversies between utilities

⁶⁷ The raising of this objection before the Supreme Court in *Morgan v. United States*, a case involving the validity of rates established by the Secretary of Agriculture for the Kansas City Stock Yards, led to the reversal of the rate-fixing order. It was argued that the Secretary of Agriculture did not himself hear the case and that the stockyard operators had no opportunity to rebut the evidence upon the basis of which the rates were established. (304 U.S. 1 [1938].)

A similar objection was urged against the findings of the Public Service Commission of Wisconsin in its order of March 24, 1936, for a reduction in the charges of the Wisconsin Telephone Company. The company complained that the findings were prepared from memoranda furnished by members of the commission's staff who also appeared as expert witnesses, but this criticism did not impress the Wisconsin Supreme Court. (*Wisconsin Tel. Co. v. Comm.*, 232 Wis. 274, 316, 317, 287 N.W. 122, 143 [1939].)

⁶⁸ It is not possible to agree with the statement of Mr. Chief Justice Hughes on this point in *Morgan v. United States*, and a reading of the proceedings and opinions of the public service commissions generally does not support his opinion. (304 U.S. 1, 20-21.)

and their consumers over the justice of past charges; its functions are largely concerned with the establishment of reasonable rates and rules of conduct for the future. And if the decisions of the commission, which affect the property rights of the future, appear to be prejudicial to the company, the company may obtain a judicial review of the fairness and validity of the commission's order before its essential property rights are impaired.

The lack of commission initiative in starting proceedings for the reduction of rates, when economic conditions make such reductions feasible, is a serious weakness in the present regulatory scheme. Responsibility for this defect must fall on the legislature where commissions are without the statutory authority to begin proceedings on their own initiative or lacks the necessary staff. If a commission with adequate statutory powers and a sufficient budget, fails to take the initiative in effecting prompt revisions in utility charges in conformity with changing economic conditions, that fact must reflect seriously on the sincerity of the commissioners as public servants. Whenever the majority of the rate reductions come as a result of cases initiated by consumer complaints rather than by commission initiative the conclusion is inescapable that the commission is negligent in the discharge of its public duties.

There is a distinct tendency for public service commissions to relax into a judicial attitude in their regulation of public utilities. The plain truth is that commissions were not established to resolve conflicting claims between the utility corporations and their customers. Their *raison d'être* is actively to give effect to the legislative policy declared in the statutes under which they operate. The failure of a commission to serve as the alert and ever-active defender of the public interest leaves the consumer interest unrepresented and unprotected. Neither the consumers themselves nor any other department of the government, state or local, possesses the knowledge, the financial resources, and the trained skill necessary to prepare the public's case for presentation in the proceedings before the commission. It is clearly the function of the commission or its staff to be responsible for the full and effective preparation and presentation of all facts and arguments which are pertinent to the commission's conclusions.⁶⁹

Commissions are occasionally criticized on the ground that their work exhibits a bias in favor of the companies they are called upon to regulate. While there are doubtless instances when the public has had a legitimate basis for concern, a general recognition of the importance of the regulatory function should result in the selection of no commissioners who will fail to inspire complete confidence in the public. The statutes attempt to guard against adverse economic interests by listing certain forbidden relations between commissioners and utility corporations.⁷⁰ Public criticism of commission bias in favor of the utility corporations is often based on a misunderstanding of the

⁶⁹ The recognition of this weakness in the procedure of many commissions and the attempt to assure the more adequate presentation of the public's case has led some of the states to provide for a consumers' counsel to act in proceedings before the commission, and in some instances, to take appeals from adverse commission opinions to the courts. This would appear to be an unnecessary and, indeed, an undesirable, development, for the commission itself should bear the full responsibility of assuring to consumers the lowest possible reasonable rates and the highest feasible standards of service.

⁷⁰ *Supra*, p. 179.

commission's functions and the statutes under which it operates. The public service law usually circumscribes the authority of the commission and sometimes imposes a procedure which to the layman appears unduly considerate of the utility. Or the commission may be functioning under the shadow of an unusually restrictive judiciary, one that is inclined to resolve all doubts in favor of the "property rights" of the company rather than the "human rights" of the consumers. Furthermore, consumers are much more aware of their immediate interests in lower rates than they are of the long-run interest of themselves and the rest of the community in the financial soundness of the corporation and its future ability to render satisfactory service.

ENFORCEMENT OF COMMISSION ORDERS. It is essential to effective regulation that the orders of a commission should be self-enforcing; that is, there should be automatic penalties attaching to the nonobservance of a commission's orders. Also, it is not enough to impose penalties for noncompliance on the offending corporation; penalties should also apply to the responsible officers of the company for violations of valid commission orders.⁷¹

A commission should have its own legal staff, and should be empowered to go into the courts to carry out its public responsibilities. Whenever it is necessary to resort to court proceedings, the commission should not be required to wait for the assignment of legal assistance from the attorney general's office or other government department, nor should the commission's right of resort to the courts rest in the discretion of any other state officer or department.

4. MUNICIPAL REGULATION

RELATION OF MUNICIPALITIES TO UTILITY CONTROL. There are three bases for relationship between municipal authorities and utility enterprises. The municipality may be the owner and operator of plants supplying utility services. The municipal officials, on the basis of the contractual obligations contained in franchises granted to utility corporations, may impose service standards, define reasonable rates and otherwise specify the respective rights and duties of the community and the utility. Or the police power of the state may be delegated to a municipality so as to permit a mandatory regulation of the utilities operating within its corporate limits. Discussion here is limited to the third situation—where the municipality, under authority delegated by the legislature, proceeds to regulate the operations of utilities within its jurisdiction, usually by ordinances adopted by the city council.⁷²

MUNICIPAL JURISDICTION. Two preliminary questions arise at the threshold of any consideration of the activity of municipalities in the regulation of utility corporations. Is there any constitutional bar to the exercise of regulatory authority by these subordinate agencies of government? And has the state delegated its regulatory powers to the municipality? The critical questions re-

⁷¹ One of the penalty provisions of the Interstate Commerce Act reads: "Any carrier, any officer, representative, or agent of a carrier, or any receiver, trustee, lessee, or agent of either of them, who knowingly fails or neglects to obey any order made under the provisions . . . of this part shall forfeit to the United States the sum of \$5,000 for each offense." (Sec. 16 [8].)

⁷² Control of utilities on the basis of franchise contracts is discussed in Chapter VII: municipal ownership and operation of utility services, in Chapter XXIV.

specting the power of a municipality to control utilities operating within its borders through ordinance, rather than by franchise or contractual agreements, are concerned with the regulation of rates and charges. It is not uncommon for a municipality to have power to determine by ordinance "the quality and character of the service to be furnished" or to require any utility to make additions and extensions to its property.⁷³ In most of the states, however, the supervision of rates and charges is entrusted exclusively to the public service commission.

The right of the state to delegate regulatory authority to municipal governments would seem to find support in the same constitutional principles that permit the state to create a public service commission. Despite this precedent, the authority of the state to provide for municipal regulation was challenged when Los Angeles undertook to regulate telephone rates under the authority of a municipal charter conferred in conformity with the state constitution. The federal Supreme Court, however, upheld this assertion of regulatory power. It was said that the power to regulate the charges of public utility corporations was one of the powers of government capable of being vested in a municipality.⁷⁴ Thus the inquiry as to authority of the municipality to regulate utility activities is reduced to the question of whether the state legislature has delegated this power to the city.

If the municipalities are to exercise regulatory jurisdiction, this power must be clearly and unquestionably delegated to the cities by the legislature.⁷⁵ In the absence of an express delegation of jurisdiction over the charges and other activities of utilities, the courts will resolve questions involving the validity of municipal regulations in favor of the exclusive undiminished authority of the state regulatory body.⁷⁶

Local regulation, to the extent of permitting the municipality to regulate the rates and charges of some or all of the utility enterprises operating within the corporate limits of cities, is found in only a minority of the states. "Home rule," to some extent, is to be found in approximately a fifth of the states.⁷⁷ In some states—Arkansas is an example—the jurisdiction of the municipal council or city commission extends to virtually all phases of regulation for practically all utilities,⁷⁸ while in other states only certain utilities essentially local in their organization and service are subject to municipal control. Where such regulatory powers are lodged in the municipality, it is desirable that there should be some provision for appeal from the orders of the municipal council. Thus, the Wisconsin statutes provide for appeal to the Public Service Commission, rather than directly to the courts.⁷⁹

STATE REGULATION V. "HOME RULE." The development of state public service

⁷³ Oregon, *Laws 1911*, c. 279, Sec. 61.

⁷⁴ *Home Tel. & Tel. Co. v. Los Angeles*, 211 U.S. 265 (1908).

⁷⁵ *Denver v. Mt. States Tel. & Tel. Co.*, 67 Colo. 225, 184 Pac. 604 (1919).

⁷⁶ *Barllesville v. Corp. Comm.*, 82 Okla. 160, 199 Pac. 396 (1921); *State v. Missouri & K. Tel. Co.*, 189 Mo. 83, 88 S.W. 41 (1905); *Portland R. L. & P. Co. v. Portland*, 210 Fed. 667 (D.Or., 1914); *Woodburn v. Comm.*, 82 Or. 114, 161 Pac. 391 (1916); *Portland v. Comm.* 89 Or. 325, 173 Pac. 1178 (1918).

⁷⁷ Arkansas, Colorado, Iowa, Louisiana, Texas, Nebraska, South Dakota, New Mexico, Kansas, and perhaps Wisconsin and Ohio.

⁷⁸ *Acts 1921*, No. 124, Sec. 17.

⁷⁹ *Statutes*, Sec. 196.58.

commissions from 1907 onward has placed the program of local regulation, or "home rule," distinctly on the defensive. At the present time the authoritative opinion is preponderantly in favor of lodging all the regulatory activities of the state in the centralized public service commission.

The trend away from "home rule" has come in spite of certain advantages which this form of regulation has offered. The local officials of the city or town are more intimately acquainted with local requirements respecting service and with the capacity of the community to pay for any particular quality of service. They are also, presumably, more fully informed as to the details of the local service, the sources of satisfaction and irritation, and the conduct of the utility's business. They may also have a more personal acquaintance with the problems and requirements of the corporation. Certainly, the practice of local responsibility for regulation creates conditions favorable to the development of a considerable measure of co-operation between the community's representatives and the corporation. In the usual municipality, however, there are offsetting disadvantages which render local regulation distinctly inferior to control by a state commission.

The advantages of state regulation over "home rule" are pertinent to effective regulation. The authority of the state commission is more nearly coextensive with the regulatory problem than is the limited jurisdiction of the municipality. The control by a state commission presumably possesses the further advantage of being more disinterested and unbiased. Finally, regulation by a state commission should attain a higher level of competence than can be expected of local regulation. The state commission is, in the less backward states, supplied with a staff of trained experts, and has the funds and time to devote to the complexities of regulation. The tendency for state regulation to displace the surviving remnants of local control represents a normal development which should be supported rather than opposed.

5. THE JUDICIARY

GENERAL. The judiciary has played a strategic role in the development of utility regulation in this country. Two characteristics of the American system of government are responsible for the eminence of the courts: the federal system with its opportunities for conflicts of jurisdiction between the different states and between the states and the federal government, and the prominence of written constitutions in our governmental scheme. In consequence of the strategic position thus given to the courts, the acts of both the legislative and the executive (or administrative) branches of the government are frequently challenged before the judiciary.

The theoretical functions of the judiciary with respect to the regulation of the utility industries can be stated very simply. There are five occasions which bring judicial inquiry into the system of control.

(1) All questions of the validity or the constitutionality of statutory enactments or of the activities of the regulatory authorities come before the courts. Very frequently attacks upon legislative and administrative acts are based upon an alleged deprivation of property without due process of law. Spe-

cifically, the federal courts are urged to overrule the rates fixed by statute or commission order on the ground that the rates are so low as to be confiscatory in violation of the due-process clause of either the Fifth or Fourteenth Amendment, or the corresponding provisions of the state constitutions, if the case is before a state court. Other sections of both the federal and state constitutions have been found useful in opposing unwelcome governmental interference with business activities. Even such intangible concepts as the "separation of powers," as it finds embodiment in the normal distinction between the functions of the executive, the legislature, and the judiciary, may be utilized to contest the validity of a particular regulatory arrangement.⁸⁰

(2) The interpretation of statutes also falls to the courts. Most utility statutes are carefully drawn with an effort to secure precision in defining the powers and responsibilities of regulatory agencies and the duties and privileges of public utilities. Nevertheless, differences of opinion arise as to the application of the statute to a particular situation or the meaning of the statutory provisions in the light of special circumstances.

(3) The courts are also called upon to decide disputes where there is no law specifically applicable. This is the "common law" method by which the courts in the process of deciding particular questions create precedents that subsequently come to be recognized as principles of general applicability.

(4) The federal courts are called upon to determine conflicts involving different governmental jurisdictions. For example, the conflicting requirements imposed by different states on railroads operating in interstate commerce furnished the occasion for the decision by the Supreme Court that the railroads of the country, in certain important respects, should be free from control by the states, and that only the federal government was competent to undertake their regulation.⁸¹

(5) Finally, the enforcement of commission orders requires the co-operation of the courts. The commission orders may be in a measure "self-enforcing" in the sense that there are penalties which automatically attach to noncompliance therewith. But if a corporation refuses to obey a commission, the element of compulsion must be supplied by the judiciary, and all penalties and fines are collectible only through court proceedings.

THE EVOLUTION OF THE RIGHT OF JUDICIAL REVIEW. The scope of judicial review has not always been so extensive as at present. Of course, the courts have always been called upon to interpret statutes, to resolve disputes in the absence of specifically applicable law, to settle conflicts of jurisdiction, and to enforce the orders of legislative agencies. The controversial issues with respect to judicial review in the field of public utility regulation center about the decisions of the courts which nullify legislative acts on the ground that they are unconstitutional, or which abrogate commission orders because they are inconsistent with the due-process clause or some other provision of the Constitution.

The rights of judicial review for those subject to regulatory control by the

⁸⁰ Thus, the "unlawful" delegation of powers by Congress to the President proved a fatal objection to the petroleum controls and the National Industrial Recovery Act. *Panama Refining Co. v. Ryan*, 293 U.S. 388 (1935); *Schechter Poultry Corp. v. U.S.*, 295 U.S. 495 (1935). See also *Springer v. Philippine Islands*, 277 U.S. 189 (1928).

⁸¹ *Wabash, St. L. & Pac. v. Illinois*, 118 U.S. 557 (1886). See also Chapter VI.

government have not always been recognized by the courts. An early case before the Supreme Court had demonstrated that the "due-process clause" of the Fifth Amendment could not be made to serve against the encroachments of state regulations on private property rights.⁸²

Little more success attended the first effort to use the newly adopted Fourteenth Amendment to oppose regulatory control by the states. In *The Slaughter House Cases* certain regulations by Louisiana with respect to the slaughtering business were challenged as repugnant to the Fourteenth Amendment in abridging "the privileges and immunities of citizens of the United States," and depriving them of their property "without due process of law."⁸³ The majority of the Supreme Court was of the opinion that the "privileges and immunities" with respect to the practice of an occupation belonged to citizens of the states and hence could not be subjected to federal protection without fettering and degrading "the State governments by subjecting them to the control of Congress."⁸⁴ And it was confidently asserted that "under no construction of that provision [the Fourteenth Amendment] that we have ever seen, or any that we deem admissible, can the restraint imposed by the State of Louisiana upon the exercise of their trade by the butchers of New Orleans be held to be a deprivation of property."⁸⁵ Throughout its discussion the Court exhibited a sensitiveness to the historical origins of the amendment and a predisposition to interpret its provisions with a close regard to the objectives sought by Congress.⁸⁶ Had this interpretation of the Fourteenth Amendment continued to receive the support of the Supreme Court, the federal judiciary could never have been charged with obstructing the development of satisfactory regulatory techniques by the states.

The opinion of the Court in *Munn v. Illinois* found the Court still unwilling to undertake an examination into the reasonableness of the charges fixed by legislation for grain elevators.⁸⁷ The Court considered itself concerned only with the power of the legislature to regulate the business in question, and stated that a consideration of the reasonableness of the rates charged by a business "affected with a public interest" was appropriate only where the legislature had been silent as to what rates should be considered "reasonable."⁸⁸

The decision in *Munn v. Illinois* did not discourage those who saw in the courts a potential protector against the rigors of regulation. In 1886 the question was again before the Supreme Court, this time on behalf of the railroads which were smarting under the Granger Laws.⁸⁹ After upholding the specific right of the state to regulate the charges of railroads, the dicta of Mr. Chief Justice Waite continued with what was more than a hint that the Court was

⁸² *Barron v. Baltimore*, 32 U.S. (7 Pet.) 243 (January Term, 1833).

⁸³ U.S. (16 Wall.) 36-130 (1873).

⁸⁴ *Ibid.*, 77-78.

⁸⁵ *Ibid.*, 81.

⁸⁶ "... We doubt very much whether any action of a State not directed by way of discrimination against the negroes as a class, or on account of their race, will ever be held to come within the purview of this provision. It is so clearly a provision for that race and that emergency, that a strong case would be necessary for its application to any other." (*Ibid.*, 81.)

Mr. Justice Bradley, in dissent, expressed sentiments which were prophetic of the construction which future courts were to adopt. (*Ibid.*, 122.)

⁸⁷ 94 U.S. 113 (1877).

⁸⁸ *Ibid.*, 133-134.

⁸⁹ *Stone v. Farmers' Loan & Trust Co.*, 116 U.S. 307.

beginning to consider more favorably the request that it review the validity of the particular exercise of regulatory power.⁹⁰

In 1890 the Court, substantially changed in its personnel, did declare certain maximum rates established by the Minnesota Railroad and Warehouse Commission to be unconstitutional—not on the ground that the particular rates were unreasonably low, but on the score that the Supreme Court of Minnesota had interpreted the state law as providing that the Commission's determination should be "final and conclusive as to what are equal and reasonable charges," depriving "the company of its right to a judicial investigation, by due process of law, under the forms and with the machinery provided by the wisdom of successive ages for the investigation judicially of the truth of a matter in controversy."⁹¹

In an exceedingly astute and farsighted dissenting opinion, Mr. Justice Bradley anticipated all of the difficulties which followed in the train of this assertion of the right of judicial review. He grounded his argument upon the ruling of *Munn v. Illinois*, found the right of the legislature to fix rates clearly established, and concluded that what the legislature could do in this matter it could delegate to a commission. He parted with the majority in concluding that the function of determining reasonableness of charges was "pre-eminently a legislative one, involving considerations of policy as well as of remuneration" and calling for the resolving of "questions of more or less." It was noted that there must be a final tribunal somewhere for every question, and that the commission was better qualified than the courts to act as the final tribunal in the matter of reasonable rates.

Four years later, in *Reagan v. Farmers' Loan & Trust Company*, the Court for the first time enjoined the enforcement of a commission rate order on the ground that the rates fixed were too low to afford a reasonable return, and in so doing asserted in broadest terms the intention of the court to review the validity of rates established by legislative authority.⁹² And another four years found the right of judicial review one of the "settled principles" of utility rate regulation.⁹³

THE PROCEDURE OF JUDICIAL REVIEW. The procedures followed by the courts in their review of the orders and decisions of the public utilities commissions

⁹⁰ "From what has thus been said, it is not to be inferred that this power of limitation or regulation is itself without limit. This power to regulate is not a power to destroy, and limitation is not the equivalent of confiscation. Under pretense of regulating fares and freights, the State cannot require a railroad corporation to carry persons or property without reward; neither can it do that which in law amounts to a taking of private property for public use without just compensation, or without due process of law." (*Ibid.*, 331.)

⁹¹ *Chicago, M. & St. P. Ry. v. Minn.*, 134 U.S. 418, 456-457.

⁹² 154 U.S. 362, 411 (1894).

⁹³ "While rates for the transportation of persons and property within the limits of a State are primarily for its determination, the question whether they are so unreasonably low as to deprive the carrier of its property without such compensation as the Constitution secures, and therefore without due process of law, cannot be so conclusively determined by the legislature of the State or by regulations adopted under its authority, that the matter may not become the subject of judicial inquiry." (*Smyth v. Ames*, 169 U.S. 466, 526 [1898].)

See Hamilton, "The Path of Due Process of Law," 48 *Internat. Jour. of Ethics* 269 (1938); see also, Graham, "The Conspiracy Theory of the Fourteenth Amendment," 47 *Yale Law Jour.* 371 (Jan., 1938) and 48 *Yale Law Jour.* 171 (Dec., 1938).

are largely determined by statutory provisions, though where the statutes are silent the courts have developed their own rules governing their relations with regulatory agencies. It is clearly advantageous to the commission to have the statutory law explicit on such matters, specifying those procedures which are best calculated to promote fairness and efficiency in the exercise of the regulatory functions.

Although the laws of the different states vary, the situation in New York may be selected as an example of the role of the courts. The orders of the Public Service Commission may come before the courts in five ways.⁹⁴ (1) The public service law makes specific provision for the use of the courts in the enforcement of commission orders. The commission is empowered to appeal to the courts on petition for a writ of mandamus or an injunction to compel the company to observe its order. (2) The common device by which utilities seek relief from unwelcome commission orders is the writ of injunction. On petition for a writ of injunction, the case is usually referred to a master or referee who considers *de novo* the entire matter. Since the same procedure prevails in the federal courts, the fact that an appeal from the statutory federal court can be taken directly to the Supreme Court has made the federal procedure preferable to the utilities. The injunction may be either temporary, pending the determination of the matter, or final and permanent. (3) A frequent method of judicial review is by the writ of certiorari. With this procedure, the record before the commission is taken before the court, oral arguments and briefs may be presented by both the utility and the commission, and the court may thereafter issue its order affirming, setting aside, or modifying the commission's order. (4, 5) The last two procedures are only infrequently resorted to and are hence of less consequence. The writ of prohibition is available to restrain an official from performing a judicial act which is beyond his jurisdiction. And with respect to certain types of commission orders, as the elimination of grade crossings, there is provision for an appeal to the Appellate Division.

Conditions antecedent to an appeal to the courts. In the more progressive statutes of recent years there has been a recognition of the desirability of restricting somewhat the tendency of the utility companies to carry an excessive number of cases to the courts. The wisdom of such measures is apparent both from the point of view of the courts, with their overcrowded dockets, and from that of the commissions, which must usually find in judicial reviews a diversion of time and energy from the other essential regulatory duties.

No appeal to the courts should be possible except from a final order of a commission. In many states, the utility is also required to apply for a rehearing and may seek judicial relief only after a rehearing has been refused or the commission has failed to meet the objections at the rehearing. Only after the company's remedies before the commission have been exhausted is an appeal to the courts appropriate.⁹⁵

The tendency for a large proportion of the appeals from the rate orders of

⁹⁴ New York, *Report of the Commission on the Revision of the Public Service Commissions Law*, pp. 150-152.

⁹⁵ *U.S. v. Ill. Central R. Co.*, 291 U.S. 457 (1934).

state commissions to be carried to the federal courts has led to federal legislation. On May 14, 1934, an amendment to the federal Judicial Code was approved which had the effect of preserving the jurisdiction of the states over utility rates until the company had exhausted its remedies in the courts of the state.⁹⁶ This statutory change has not completely halted the march of rate cases to the federal courts, for the courts may decide that no "plain, speedy and efficient remedy" is available in the courts of the state;⁹⁷ but it has measurably increased the freedom of the states in dealing with what is essentially a state problem.

THE SCOPE OF JUDICIAL REVIEW. The limitations which define and circumscribe the functions of the courts in their review of the findings and orders of administrative agencies and public service commissions are in part the result of judicial self-restraint and in part the consequence of legislative enactments. The problem is of extreme complexity and is further confused by divergencies of opinion to be found among equally competent members of the highest tribunal. It should be noted that in many instances the competence of the administrative commissions in their peculiar field of activity is presumably superior to that of the judiciary, which has neither the time nor the inclination to become informed on all the details of the problems presented for review. Furthermore, in many instances it is not the judiciary itself which is passing on the questions raised in appeals; the case is commonly referred to a special master or referee who hears the testimony, digests the evidence, and submits his summary, with his recommendations, to the court itself.

In general, the legislatures seek to give finality to the findings of fact reached by their commissions. A typical example is afforded by the provisions of the Public Utility Holding Company Act of 1935.⁹⁸ After providing for review in the circuit court of appeals, the statute specifies that the Commission shall certify to the court a transcript of the record and that the court "shall have exclusive jurisdiction to affirm, modify, or set aside such order, in whole or in part." And "no objection to the order of the Commission shall be considered by the court unless such objection shall have been urged before the Commission or unless there were reasonable grounds for failure so to do." Provision is made for the reference of any additional evidence to the Commission, with an opportunity for the Commission to modify its decision if it should so desire. Further, "the findings of the Commission as to the facts, if supported by substantial evidence, shall be conclusive."

It should be recalled that the courts are not in a position to substitute their judgment for that of the regulatory agency; indeed, the court is limited to

⁹⁶ The provision of the Johnson Act (48 Stat. c. 283, p. 775) reads:

"... no district court shall have jurisdiction of any suit to enjoin, . . . any order of an administrative board or commission of a State, . . . where jurisdiction is based solely upon the ground of diversity of citizenship, or the repugnance of such order to the Constitution of the United States, where such order (1) affects rates chargeable by a public utility, (2) does not interfere with interstate commerce, and (3) has been made after reasonable notice and hearing, and where a plain, speedy, and efficient remedy may be had at law or in equity in the courts of such State."

⁹⁷ *Corporation Commission v. Cary*, 296 U.S. 452 (1935); *Mt. States P. Co. v. Public Service Commission of Montana*, 299 U.S. 167 (1936).

⁹⁸ Sec. 24 (a).

setting aside the order of the commission and it may not take the initiative in substituting a different order in its stead.⁹⁹

Many considerations support the wisdom of the limitations which have been placed on the scope of judicial review. The purely practical goal of preventing the courts from being overwhelmed with the work of other agencies of government has been of great weight. The desire to preserve the integrity and independence of other branches of the government has not been without influence. The federal courts have wisely been hesitant to undertake the interpretation of state legislation, always accepting the interpretation of the highest state court as controlling on the federal judiciary.¹⁰⁰

The legislatures have not been conspicuously successful in their attempt to improve the efficiency of the regulatory system by limiting the scope of judicial review to questions of law as distinct from questions of fact, to determining "the ultimate question as to whether the Commission acted within its power."¹⁰¹ Nowhere has this problem been more perplexing than in the field of rate regulation. In attempting to delimit the scope of judicial review the Court has sought to distinguish "between action within the sphere of legislative authority and action which transcends the limits of legislative power." Provided it observes the requirements of due process specifically applicable, affording a fair hearing and acting upon evidence and not arbitrarily, the commission may, with the authorization of the legislature, make findings of fact which are conclusive; and in such instances the Court will confine its inquiry to ascertaining whether there is evidence to support the findings. But regulation which culminates in the setting of a confiscatory rate is beyond the range of legislative power, and where such confiscation is charged the Court has held that it may inquire into the facts, whether the rates have been established directly by the legislature or by a subordinate agency.¹⁰² In the language of Mr. Chief Justice Hughes, the function of judicial review then assumes a different character:

⁹⁹ See *Central Kentucky Nat. Gas Co. v. Railroad Comm.*, 290 U.S. 264 (1933), where the Court refused to permit a lower court to attach to its decree a condition with respect to the future rates, on the ground that such a condition would constitute an unwarranted interference with the rate-making function of the state commission.

¹⁰⁰ *Chicago, B. & Q. R. Co. v. Railroad Comm.*, 237 U.S. 220 (1915), reversing 152 Wis. 654; *Illinois C. R. Co. v. Mulberry Hill Coal Co.*, 238 U.S. 275 (1915).

¹⁰¹ *I.C.C. v. Union Pacific R. Co.*, 222 U.S. 541, 548 (1912).

In this instance the Court attempted a summary of the scope of judicial review, stating:

"... it has been settled that the orders of the Commission are final unless (1) beyond the power which it could constitutionally exercise; or (2) beyond its statutory power; or (3) based upon a mistake of law. But questions of fact may be involved in the determination of questions of law, so that an order, regular on its face, may be set aside if it appears that (4) the rate is so low as to be confiscatory and in violation of the constitutional prohibition against taking property without due process of law; or (5) if the Commission acted so arbitrarily and unjustly as to fix rates contrary to evidence, or without evidence to support it, or (6) if the authority therein involved has been exercised in such an unreasonable manner as to cause it to be within the elementary rule that the substance, and not the shadow, determines the validity of the exercise of the power. . . ." (P. 547.)

¹⁰² There is no requirement of an independent judgment as to the facts by a federal court. In *United Gas Public Service Co. v. Texas*, 303 U.S. 123 (1938), Mr. Chief Justice Hughes, in commenting on the practice of review before the Supreme Court, remarked: "This Court will review the findings of fact by a state court (1) where a federal right has been denied as the result of a finding shown by the record to be without evidence to support it, and (2) where a conclusion of law as to a federal right and findings of fact are so intermingled as to make it necessary, in

"But this judicial duty to exercise an independent judgment does not require or justify disregard of the weight which may properly attach to findings upon hearing and evidence. On the contrary, the judicial duty is performed in the light of the proceedings already had and may be greatly facilitated by the assembling and analysis of the facts in the course of the legislative determination. Judicial judgment may be none the less appropriately independent because informed and aided by the sifting procedure of an expert legislative agency. Moreover, as the question is whether the legislative action has passed beyond the lowest limit of the permitted zone of reasonableness into the forbidden reaches of confiscation, judicial scrutiny must of necessity take into account the entire legislative process, including the reasoning and findings upon which the legislative action rests. We have said that 'in a question of rate making there is a strong presumption in favor of the conclusions reached by an experienced administrative body after a full hearing.' . . . The established principle which guides the Court in the exercise of its judgment on the entire case is that the complaining party carries the burden of making a convincing showing and that the Court will not interfere with the exercise of the rate-making power unless confiscation is clearly established."¹⁰³

The case for making the findings of fact of the administrative commissions conclusive is a very strong one. It is, of course, essential to the safeguards of due process that the agency making the findings of fact shall be impartial. And "impartial" for an administrative commission refers not simply to receptivity with respect to conflicting facts urged for consideration; the affirmative obligation rests on a commission to seek all facts having a bearing on the matter, even though such facts are not introduced by any of the parties to the proceedings. But those additional facts which the commission finds essential to the attainment of a sound conclusion may not be developed privately by the commission through the efforts of its own staff; all facts upon which its findings and conclusions rest must be presented so that those affected by the commission's decision may have an opportunity to counter the effect of any testimony which is unfavorable to their interest.¹⁰⁴

This was substantially the position taken by Mr. Justice Brandeis in his dissenting opinion in the *St. Joseph Stock Yards* case, an opinion which has been described as stating "the law as it ought to be." He contended that the "inexorable safeguard which the due process clause assures is not that a court may examine whether the findings as to the value or income are correct, but that the trier of the facts shall be an impartial tribunal; that no finding shall be made except upon due notice and opportunity to be heard; that the procedure at the hearing shall be consistent with the essentials of a fair trial; and

order to pass upon the federal question, to analyze the facts. . . . We make that analysis, not to determine issues of fact arising on conflicting testimony or inferences, and thus to usurp the function of the state court as a trier of the facts, but to perform our own proper function in deciding the question of law arising upon the findings which the evidence permits." (P. 143.)

This case raised a most unusual issue, since the review of the city ordinance establishing gas rates for domestic consumers was before a jury which rendered a verdict upholding the rates as being nonconfiscatory. The company vigorously protested the jury trial procedure, but the Supreme Court upheld this uncommon practice.

¹⁰³ *St. Joseph Stock Yards Co. v. U.S.*, 298 U.S. 38, 53 (1936).

¹⁰⁴ *Ohio Bell Tel. Co. v. Comm.*, 301 U.S. 292, 302-303 (1937).

that it shall be conducted in such a way that there will be opportunity for a court to determine whether the applicable rules of law and procedure were observed."¹⁰⁵

Judicial review affords protection to the corporation and the investor rather than to the consumer. Consumers individually have too little at stake to carry an appeal to the courts, especially as the costs are prohibitive. For protection against unreasonably high rates they must depend on the commission, and they can express their displeasure only indirectly, that is, in the election of those who have the power to appoint and remove the commission. In many states the statutes are so drawn as to leave the aggrieved consumer no right of appeal from the decisions of the commission, on the assumption that the commission represents the consumer and that excessive rates do not confiscate the property of the consumer since he is under no obligation to take the service.¹⁰⁶

A DISSENT FROM THE PRACTICE OF FEDERAL REVIEW OF THE RATES PRESCRIBED BY STATE REGULATORY AGENCIES. Recent changes in the personnel of the Supreme Court make it pertinent to question whether there impends a change in the attitude of the Supreme Court toward the propriety of the review by the federal courts of rates established by state public service commissions. Thus in one of his concurring opinions, Mr. Justice Black declined to agree that the rights of a foreign corporation "doing business in Texas are derived from the Fourteenth Amendment or that the Fourteenth Amendment deprives Texas of its constitutional power to determine the reasonableness of intrastate utility rates."¹⁰⁷

In an earlier opinion, involving state taxation of corporations rather than public utility regulation, Mr. Justice Black asked for a revised interpretation of the Fourteenth Amendment. Noting that the Court had many times changed its interpretation of the Fourteenth Amendment, he expressed the conviction that the Court should rule that the word "person" in the Amendment does not include "corporations"; for "neither the history nor the language of the Fourteenth Amendment justifies the belief that corporations are included within its protection."¹⁰⁸

Should other members of the Supreme Court be persuaded to join Mr. Justice Black there would indeed be a consequential change in the practice of utility regulation. Federal judicial review would be substantially curtailed; the state authorities would enjoy a new freedom in their supervision of utilities, and they would be compelled by the new circumstances to assume a larger responsibility for the welfare of the industry.

¹⁰⁵ 298 U.S. 38, 73 (1936).

¹⁰⁶ *Birmingham v. So. Bell Tel. & Tel. Co.*, 234 Ala. 526, 533 (1937).

¹⁰⁷ *United Gas Pub. Serr. Co. v. Texas*, 303 U.S. 123, 146-147 (1938). Mr. Justice Black added: "Even applying the Fourteenth Amendment under the prevailing doctrine, I do not believe that this Court (apart from procedural questions) is called upon to do more than determine the sole question of confiscation. Any indication by this Court of the value of the company's property will unjustifiably affect and control subsequent valuations for rate making purposes."

¹⁰⁸ *Conn. Gen. Life Ins. Co. v. Johnson*, 303 U.S. 77, 89-90 (1938).

NOTES TO UTILITY REGULATION CHART CHART 5—PAGES 206-217

Sources: The "General Statutory Provisions as to Commissions" are based on the 1930 edition of the *Bonbright Utility Regulation Chart*, published by Bonbright & Company, Inc., with revisions to July, 1939 by Moody's Investors Service. The remainder of the chart is derived from the Federal Power Commission's *State Commission Jurisdiction and Regulation of Electric and Gas Utilities*, January, 1941.

KEY TO SYMBOLS USED

Symbol	Utility	R	Steam railroads
E	Privately owned electric	I	Interurban railways
G	Privately owned gas	S	Street railways
M	Municipal, electric and gas	B	Motor busses
N	Natural gas production	C	Motor carriers, common
W	Water	Cc	Motor carriers, contract
T	Telephone	P	Pipelines
Te	Telegraph	H	Steam heating

(-) Incidental to general powers.

Italics indicate that orders have been promulgated under the statutory authorizations.

^a Title adopted July 5, 1937.

^b Two civilian members appointed by the Senate, term 3 years, salary \$7,500. Engineer member detailed from Corps of Engineers, U.S.A., usually for 4 years, salary \$9,000. (District government paying only excess above Army pay.)

^c Appointed by governor with consent of Senate.

^d First five appointees have terms expiring at intervals of every two years from April 1, 1937.

^e Two associates receive \$1,500 for both.

^f State commission did not supply answer, for privately owned electric utilities.

^g State commission did not supply answer, for privately owned gas utilities.

^h State commission did not supply answer, for municipally owned electric and gas utilities.

ⁱ For operations outside of corporate limits only.

^j Except in home rule cities for privately owned electric utilities.

^k Utilities chartered by special act of legislature.

^l No municipally owned utilities involved.

^m When two privately owned electric utilities claim the right to serve.

ⁿ When two privately owned gas utilities claim the right to serve.

^o Initiate investigations on own motion.

^p Except where utility operates entirely within one city.

^q Unless competition between privately owned electric and gas utilities is involved.

^r Controlled but not through certificate of convenience and necessity.

^s Bonds only.

^t Except manufactured gas.

^u Except in cities of 10,000 population or more.

^v Specific power over municipally owned utilities not granted by statute. Regulation has not been attempted under general powers.

^w The primary power to regulate utilities in incorporated places rests in the city council with appeal to the commission.

^x No special power over natural gas production but regulated as other gas utilities.

^y Except where municipality and utility enter into a contract.

^z If over 10 per cent.

^{aa} Street lighting and water pumping only.

^{ab} If competition is involved in communities of less than 2,000 population.

^{ac} Except where company does no retail business.

^{ad} Statute confers power to regulate municipal utilities but State supreme court has ruled that the commission has no power over rates. Other phases of regulation have not been judicially determined. The legal right of a municipality to serve outside its corporate limits is questionable, but if the power exists it is believed to be subject to commission jurisdiction.

^{ae} Operations of municipally owned utilities authorized only by legislature.

^{af} F.P.C. system approved for privately owned electric utilities desiring to adopt it.

^{ag} Power to control production vested in another body.

CHART 5—UTILITY

Showing Statutory Provisions Pertaining to Utility Regulatory Commissions
Electric Power and Light

GENERAL STATUTORY PROVISIONS

STATE	Name of Commission	Date Established	
		Original Comm.	Present Comm.
Alabama	Public Service Commission	1881	1915
Arizona	Corporation Commission	1911	1911
Arkansas	Department of Public Utilities	1899	1935
California	Railroad Commission	1879	1912
Colorado	Public Utilities Commission	1907	1913
Connecticut	Public Utilities Commission	1853	1911
Delaware	No Commission		
Dist. of Columbia	Public Utilities Commission	1913	1926
Florida	Railroad Commission	1887	1897
Georgia	Public Service Commission	1879	1922
Idaho	Public Utilities Commission	1913	1913
Illinois	Commerce Commission	1871	1921
Indiana	Public Service Commission	1913	1933
Iowa	State Commerce Commission ^a	1878	1937
Kansas	Corporation Commission	1901	1933
Kentucky	Public Service Commission	1880	1934
Louisiana	Public Service Commission	1898	1921
Maine	Public Utilities Commission	1858	1914
Maryland	Public Service Commission	1910	1910
Massachusetts	Department of Public Utilities	1869	1919
Michigan	Public Utilities Commission	1909	1919
Minnesota	Railroad & Warehouse Commission	1871	1887
Mississippi	Public Service Commission	1884	1938
Missouri	Public Service Commission	1875	1913
Montana	Railroad and Public Service Commission	1907	1913
Nebraska	State Railway Commission	1907	1907
Nevada	Public Service Commission	1907	1918
New Hampshire	Public Service Commission	1844	1911
New Jersey	Board of Public Utility Commissioners	1911	1911
New Mexico	State Corporation Commission	1912	1912
New York	Public Service Commission	1908	1921
North Carolina	Utilities Commission	1891	1934
North Dakota	Board of Railroad Commissioners	1889	1889
Ohio	Public Utilities Commission	1911	1913
Oklahoma	Corporation Commission	1907	1907
Oregon	Public Utilities Commission	1907	1931
Pennsylvania	Public Utility Commission	1907	1937
Rhode Island	Administrator	1912	1939
South Carolina	Public Service Commission	1896	1922
South Dakota	Public Utilities Commission	1889	1889
Tennessee	Railroad and Public Utilities Commission	1883	1919
Texas	Railroad Commission	1894	1894
Utah	Public Service Commission	1917	1935
Vermont	Public Service Commission	1886	1908
Virginia	State Corporation Commission	1816	1902
Washington	Department of Public Service	1905	1935
West Virginia	Public Service Commission	1913	1915
Wisconsin	Public Service Commission	1874	1931
Wyoming	Public Service Commission	1915	1919

REGULATION CHART

and to Their Authority Over Utilities Regulated, with Particular Reference to Companies and Gas Companies.

AS TO COMMISSIONS

STATE	Number of Members	Elected or Appointed	Tenure of Office (Years)
Alabama	3	Elected	4
Arizona	3	Elected	3
Arkansas	3	Appointed	3
California	5	Appointed	6
Colorado	3	Appointed	6
Connecticut	3	Appointed	6
Delaware			
Dist. of Columbia	3	Appointed ^b	3-4 ^b
Florida	3	Elected	4
Georgia	5	Elected	6
Idaho	3	Appointed	6
Illinois	5	Appointed	2
Indiana	3	Appointed	Pleasure of Gov.
Iowa	3	Elected	4
Kansas	3	Appointed	4
Kentucky	3	Appointed	4
Louisiana	3	Elected	6
Maine	3	Appointed	7
Maryland	3	Appointed	6
Massachusetts	5	Appointed	5
Michigan	5	Appointed	4
Minnesota	3	Elected	6
Mississippi	3	Elected	4
Missouri	5	Appointed	6
Montana	3	Elected	6
Nebraska	3	Elected	6
Nevada	3	Appointed	4
New Hampshire	3	Appointed	6
New Jersey	3	Appointed	6
New Mexico	3	Elected	6
New York	5	Appointed	10
North Carolina	3	One Elected; 2 Appointed	4
North Dakota	3	Elected	2
Ohio	3	Appointed	6
Oklahoma	3	Elected	6
Oregon	1	Appointed	4
Pennsylvania	5	Appointed	10 ^d
Rhode Island	1	Appointed	Indefinite
South Carolina	7	Elected by Legislature	2
South Dakota	3	Elected	6
Tennessee	3	Elected	6
Texas	3	Elected	6
Utah	3	Appointed	6
Vermont	3	Appointed	6
Virginia	3	Elected by Legislature	6
Washington	3	Appointed	Pleasure of Gov.
West Virginia	3	Appointed	6
Wisconsin	3	Appointed ^c	6
Wyoming	3	Appointed	6

GENERAL STATUTORY PROVISIONS

STATE	Salaries	How Removed
Alabama	President \$4600; Associates \$4000	Impeach. before Supreme Court
Arizona	\$4500	Impeachment or Term Expiration
Arkansas	\$5000	Governor
California	\$8000	$\frac{2}{3}$ vote of Legislature
Colorado	\$4000	Legislative impeachment
Connecticut	\$9000	Superior Court
Delaware		
Dist. of Columbia	\$7500-\$9000 ^b	President
Florida	Chairman \$4500; Commis'ners \$4000	Gov. for cause; Senate confirm.
Georgia	\$4800; Chairman \$5300	Legislative impeachment
Idaho	\$3000	Governor for cause
Illinois	\$6000	No provision
Indiana	\$6000	Governor
Iowa	\$3800	Impeachment
Kansas	\$4000	Governor for cause
Kentucky	\$5000	By Governor
Louisiana	\$4800	Impeachment
Maine	\$6000	Governor and Council for cause
Maryland	\$5000; Chairman \$6000	Governor
Massachusetts	\$7000; Chairman \$8000	Governor with consent of Council
Michigan	\$7000	Impeachment
Minnesota	\$4500 approp.; \$500 Grain fund	Governor
Mississippi	\$3100	
Missouri	\$5500	No precedent
Montana	\$4000	Impeachment
Nebraska	\$5000	Imp. by legislat. & trial by S. Ct.
Nevada	\$5000, \$2500, \$1000	Railroad Comm. Board
New Hampshire ..	\$5000	Governor and Council
New Jersey	\$12,000	No provisions
New Mexico	\$3000	Impeachment
New York	\$15,000	Governor on charges
North Carolina ...	Chairman \$6600 ^e	Impeachment
North Dakota	\$2400	Impeachment
Ohio	\$6000	Governor
Oklahoma	\$5000	Impeachment
Oregon	\$7500	Governor
Pennsylvania	\$10,000; Chairman \$10,500	Gov. & 2-thirds Senate for cause
Rhode Island	Chief \$5000	For cause after hearing
South Carolina ...	Chairman \$3636; \$3400	Governor
South Dakota	\$4500-3500	Impeachment
Tennessee	\$5000	Courts
Texas	\$7000	Impeachment
Utah	\$4200	Governor
Vermont	\$2000; Chairman \$4200	Governor with consent of Senate
Virginia	\$8000; Chairman \$8250	Impeachment
Washington	Director \$6000; Super. \$5000	Governor
West Virginia	\$6000	Governor for cause
Wisconsin	\$5000	Governor for cause
Wyoming	\$3600	Governor

REGULATION CHART (Continued)

AS TO COMMISSIONS (Continued)

STATE	State Courts Authorized to Review Commission's Orders
Alabama	Circuit Ct. Montgomery Co. thence Supreme Court
Arizona	(All) Superior Court thence Supreme Court
Arkansas	Circuit Court
California	Supreme Court
Colorado	District and Supreme Court
Connecticut	Superior Courts
Delaware	
Dist. of Columbia	U.S. Dist. Court of D. of C.; U.S. Court of Appeals for D. of C.
Florida	Supreme Court
Georgia	Superior Court thence Supreme Court
Idaho	Supreme Court
Illinois	Circuit or Superior Court thence Supreme Court
Indiana	Circuit Ct. (Superior Ct. Marion Co.) thence Supreme Court
Iowa	District Court thence Supreme Court
Kansas	District Court thence Supreme Court
Kentucky	Circuit Court thence Court of Appeals
Louisiana	District Court thence Supreme Court
Maine	Supreme Judicial Court
Maryland	Equity Courts in Baltimore City and Circuit Courts for Counties
Massachusetts	Supreme Judicial Court
Michigan	Circuit Court thence Supreme Court
Minnesota	District Court
Mississippi	Circuit Courts
Missouri	Circuit Court thence Supreme Court
Montana	District Court thence Supreme Court
Nebraska	Supreme Court
Nevada	District Court thence Supreme Court
New Hampshire	Supreme Court
New Jersey	Supreme Court and Court of Errors and Appeals
New Mexico	State Supreme Court
New York	Supreme Court thence Court of Appeals
North Carolina	Superior Court thence Supreme Court
North Dakota	District Court thence Supreme Court
Ohio	Supreme Court
Oklahoma	Supreme Court
Oregon	Circuit Court thence Supreme Court
Pennsylvania	Superior Court thence Supreme Court
Rhode Island	Supreme Court
South Carolina	All Courts
South Dakota	District Courts thence Supreme Court
Tennessee	Chancery Court thence Supreme Court
Texas	Travis County District Court
Utah	District and Supreme Courts
Vermont	Supreme Court
Virginia	Supreme Court of Appeals
Washington	Superior Court and Supreme Court
West Virginia	Supreme Court of Appeals
Wisconsin	Circuit Court (Dane County) thence Supreme Court
Wyoming	District Court thence Supreme Court

STATE	UTILITIES SUBJECT TO COMMISSION JURISDICTION															
Alabama	E	G				W	T	Te	R	I	S	B	C	Cc	P	H
Arizona	E	G				W	T	Te	R			B	C	Cc	P	H
Arkansas	E	G	M		N ²⁸	W	T	Te	R		S	B	C	Cc		H
California	E	G			N ²⁸	W	T	Te	R	I	S	B	C	Cc	P	H
Colorado	E ⁵	G	M			W	T	Te	R	I	S	B	C	Cc	P	H
Connecticut	E	G	M			W	T	Te	R	I	S	B	C	Cc		
Delaware																
Dist. of Columbia	E	G		7				T			I	S	B			P H
Florida									R	I						
Georgia	E	G	M				T	Te	R	I	S	B	C	Cc		
Idaho	E	G				W	T	Te	R	I	S	B	C	Cc	P	
Illinois	E	G			N	W	T	Te	R	I	S	B	C		P	H
Indiana	E	G	M		N	W	T	Te	R	I	S	B	C	Cc	P	H
Iowa									R	I		B	C			
Kansas	E ¹¹	G ¹¹			N	W	T	Te	R	I	S	B	C	Cc	P	H
Kentucky	E	G	M		N			T	Te		S				P	
Louisiana	E	G		s	N ²⁸	W	T	Te	R	I	S	B	C	Cc	P	H
Maine	E	G	M			W	T	Te	R	I	S					H
Maryland	E	G	M			W	T	Te	R	I	S	B	C	Cc		H
Massachusetts	E	G	M			W	T	Te	R	I	S	B	C	Cc		
Michigan	E	G	M		N			T		R	I	S	B	C	Cc	P H
Minnesota								T		R	I		B	C	Cc	
Mississippi								T	Te	R	I	S	B	C	Cc	
Missouri	E	G			N	W	T	Te	R	I	S	B	C	Cc		H
Montana	E	G	M			W	T	Te	R		S	B	C	Cc	P	H
Nebraska								T	Te	R	I	S	B	C	Cc	
Nevada	E	G	M			W	T	Te	R	I	S	B	C	Cc	P	H
New Hampshire	E	G	M			W	T	Te	R	I	S	B	C	Cc		H
New Jersey	E	G	M			W	T	Te	R	I	S	B			P	H
New Mexico	E ¹⁶	G ¹⁶	17		N ²⁸			T	Te	R		B	C	Cc	P	
New York	E	G ¹⁸	M		N ¹⁹	W	T	Te	R	I	S	B	C	Cc	P	H
North Carolina	E	G	M			W	T	Te	R	I	S	B	C		P	
North Dakota	E	G			N	W	T	Te	R	I	S	B	C	Cc	P	H
Ohio	E ¹⁸	G	M		N	W	T	Te	R	I	S	B	C	Cc	P	H
Oklahoma	E	G			N	W	T	Te	R	I	S	B	C	Cc	P	
Oregon	E	G				W	T	Te	R	I	S	B	C	Cc		H
Pennsylvania	E	G	M		N	W	T	Te	R	I	S	B	C	Cc	P	H
Rhode Island	E	G	M			W	T	Te	R	I	S	B	C	Cc	P	H
South Carolina	E	G				W	T	Te	R	I	S	B	C	Cc	P	H
South Dakota								T	Te	R		B	C	Cc		
Tennessee	E	G				W	T	Te	R	I	S	B	C	Cc		
Texas		G			N				R	I		B	C	Cc	P	
Utah	E	G		25		W	T	Te	R	I	S	B	C	Cc		H
Vermont	E	G	M			W	T	Te	R	I	S	B	C			
Virginia	E	G				W	T	Te	R	I	S	B	C	Cc	P	
Washington	E	G			N	W	T	Te	R	I	S	B	C	Cc		
West Virginia	E	G	M		N	W	T	Te	R	I	S	B	C	Cc	P	H
Wisconsin	E	G	M			W	T	Te	R	I	S	B	C	Cc		H
Wyoming	E	G	M		N	W	T	Te	R			B	C	Cc	P	H

REGULATION CHART (Continued)

[illegible]

REGULATION OF ELECTRIC AND GAS

STATE	SERVICE STANDARDS (Continued)		Initiate Investigations and Hold Hearings	Prescribe Temporary Rate Pending Investigations
	Allocate Unincorporated Territory among Utilities	Order Interconnections		
Alabama	(E) (G)	(E) (G)	E G	1 2
Arizona	(E) (G)	E G	E G	E G
Arkansas	E G	(E) (G)	E G	
California	E G	E G	E G	
Colorado	E G	E G	E G	
Connecticut		E G	E G	(E) (G)
Delaware				
Dist. of Columbia	(E) (G)	E G	E G	(E) (G)
Florida				
Georgia	(E) (G)	(E) (G)	E G	(E) (G)
Idaho	E G	E G	E G	E G
Illinois	E ⁸ G ⁹	E G	E G	E G
Indiana		E G	E G M ¹⁰	E G
Iowa				
Kansas	E G		E G	
Kentucky	E G	(E) (G)	E G	(E) (G)
Louisiana	⁹	1 2	(E) (G) ²	2
Maine	E G	E G	E G M ¹⁰	
Maryland	(E) (G)	(E) (G)	E G M ¹⁰	(E) (G)
Massachusetts	E G		E G	E G
Michigan			E G	
Minnesota				
Mississippi				
Missouri	E G	E ²	E G	E G
Montana		(E) (G)	E G M ¹⁰	(E) (G)
Nebraska				
Nevada	E G	E G	E G M ¹⁰	
New Hampshire	E G	E G	E G	E G
New Jersey	E (G)	(E) (G)	E G M ¹⁰	
New Mexico			(E) (G)	
New York	1 2	E G	E G M ¹⁰	E G
North Carolina	E G	E G	E G	E G
North Dakota	(E) G	(E) G	E G	E G
Ohio		(E) (G)	E G	
Oklahoma		(E) (G)	E G	(E) (G)
Oregon		(E) (G)	E G	
Pennsylvania	(E) (G)	(E) (G)	E G M ¹⁰	E G
Rhode Island			E G M ¹⁰	
South Carolina	E G	E G	E G	E G
South Dakota				
Tennessee		(E) (G)	E G	E (G)
Texas		(G)	G	
Utah	E G	E G	E G	
Vermont	1 2	(E) G	E G M ¹⁰	1 2
Virginia	(E)		E G	E G
Washington		E G	E G	E G
West Virginia	(E) G	(E) (G)	E G M ¹⁰	1
Wisconsin	E G	E G	E G M ¹⁰	(E) (G)
Wyoming		E G	E G M ¹⁰	

REGULATION CHART (Continued)

UTILITIES, PRIVATE AND MUNICIPAL

Establish Sliding Scale Rates	Initial Service by Certificate of Convenience and Necessity	Lease or Sale of Facilities	Mergers and Consol- idations	Reorgani- zations	Issu- ance of Securities
E G	E G	E G	E G	E G	E G
E G	E G	E G	E G	E G	E G
E G	E G M ⁴	E G	E G	E G	E G
E G	E G	E G	E G	E G	E G
E G	E G M ⁴	E G	(E) (G)	(E) (G)	
E G	⁶	E G	E G	(E) G	E G
E G	E G	E G	E G	E G	E G
(E) (G)					E G
E G	E G	(E) (G)	(E) (G)	(E) (G)	
	E G	E G	E G	E G	E G
	E G M ⁴	E G	E G		E G
(E) (G)	E G	E G	E G	E G	E G
¹ ²	E G M ³	(E) (G)	(E) (G)	¹ ²	E G
(E) (G)	M ¹³	E G	E G	E G	E G
E G	E G M ⁴	E G	E G	E G	E G
(E) (G)	¹²				E G
E G	E G	E G	E G	E G	E G
(E) (G)					
E G	E G M ⁴	E G	E G		E G
E G	E G M ⁴	E G	E G	E G	E G
(E) (G)	E G M ⁴	(E) G	E G	(E) (G)	E G
E G	E G M ⁴	E G	E G	E G	E G
E G	E G M ⁴	E G	E G	E G	E G
(E) (G)	E G	E G	E G	E G	E G
(E) (G)					
E G	E G ²³	E G	E G	E G	E G
(E) (G)	E G M ⁴	E G	E G	(E) (G)	E G
E G	E G M	E G	E G	(E) (G)	E G
	E	E	E	E	E
(E) (G)	E G	E G	E G	E G	E G
(G)	(G)				
(E) (G)	E G	E G	E G		E G
(E) (G)	E G ²⁶	E G	E G	¹ ²	E G
		(E) (G)	(E) (G)	(E) (G)	E G
E G		E G	E G	E G	E G
(E) (G)	E G M	E G	E G	E G	E G
(E) (G)	E G M	E G	E G	E G	E G
E G	E G M	E G	E G	E G	E G

REGULATION OF ELECTRIC AND GAS UTILI

STATE	Purchases of Voting Stock by—		Dividends that Will Impair Capital
	Private Corporations	Other Utilities	
Alabama	E G	E G	E G
Arizona		E G	(E) (G)
Arkansas		E G	(E) (G)
California		E G	E G
Colorado			
Connecticut		E G	E G
Delaware			
Dist. of Columbia		E G	(E) (G)
Florida			(E) (G)
Georgia			
Idaho	1 2	E G	(E) (G)
Illinois		E G	E G
Indiana		E G	E G
Iowa			
Kansas			E G
Kentucky			1 2
Louisiana	1 2	1 2	1 2
Maine		E G	(E) (G)
Maryland	E G	E G	(E) (G)
Massachusetts	E G	E G	E G
Michigan			
Minnesota			
Mississippi			
Missouri	E G	E G	E G
Montana			
Nebraska			
Nevada			
New Hampshire			E G
New Jersey	E G	E G	E G
New Mexico			
New York	E G ²¹	E G ²¹	E (G)
North Carolina	E	E G	E G
North Dakota	E	E G	E G
Ohio		E G	(E) (G)
Oklahoma			
Oregon		E G	(E) (G)
Pennsylvania		E G	(E) (G)
Rhode Island		E G	(E) (G)
South Carolina	E	E	E G
South Dakota			
Tennessee	(E) (G)	(E) (G)	(E) (G)
Texas			
Utah		E G	E G
Vermont			1 2
Virginia		(E) G	E G
Washington	E G	E G	E G
West Virginia		E G	(E) (G)
Wisconsin		E G	E G
Wyoming			

REGULATION CHART (Continued)

TIES, PRIVATE AND MUNICIPAL—(Continued)

Budgets of Expenditures for Specific Purposes	Loans to Affiliated Interests	Contracts with or Payments to Affiliated Interests	To Require Competitive Bidding on—	
			Major Property Additions	Security Issues
E G (E) (G)	E G (E) G (E) (G)	E G (E) (G) E G		1 2 E G
(E) (G)	E G (E) (G)	E G (E) (G) (E) (G)	(E) (G)	(E) (G) (E) (G)
	(E) (G) E G	(E) (G) E G E G		
	(E) (G)	(E) (G)		(E) (G)
1 2 E G (E) (G) E G	1 2 E G (E) (G) E G	1 2 E G (E) (G) E G	1 2	(E) (G) 1 2 (E) (G) (E) (G) E ¹⁴ G ¹⁴
(E) (G)	E G	E G	(E) (G)	(E) (G)
E G	E G	E G	1 2 (E) (G)	(E) (G) (E) (G)
1 2 E G	E G E G (E) (G)	E G E G E G (E) (G) (E) (G)	E G (E) (G)	1 2 E G E G (E) (G)
E G E G E	E G E G E G E G	E G E G E G E G	E G E	E (G) E
E G	(E) G	(E) (G) (G)		
E G 1 2	1 2 E G	E G 1 2 E G	1 2	(E) G
E G (E) G	E G E G E G	E G E G E G	(E) (G)	(E) (G)

REGULATION OF ELECTRIC AND GAS UTILITIES

STATE	POWER TO PRESCRIBE			
	Prescribe Uniform System of Accounts	Designate Records to be Kept	Order Specific Entries or Adjustments to Accounts	Prescribe Depreciation Method
Alabama	E G	E G	(E) (G)	E G
Arizona	E G	E G	E G	E G
Arkansas	E G	E G	(E) (G)	E G
California	E G	E G	E G	E G
Colorado	E G	E G	E G	E G
Connecticut	E G M	E G	E G	E G
Delaware	E G	(E) (G)	E G	E G
Dist. of Columbia	E G	(E) (G)	(E) (G)	(E) (G)
Florida	E G	(E) (G)	(E) (G)	(E) (G)
Georgia	E G	(E) (G)	(E) (G)	(E) (G)
Idaho	E G	E G	(E) (G)	E G
Illinois	E G	E G	(E) (G)	(E) (G)
Indiana	E G M	E G	E G	E G
Iowa	E G	E G	E G	(E) (G)
Kansas	E G	E G	E G	(E) (G)
Kentucky	E G	(E) (G)	(E) (G)	(E) (G)
Louisiana	(E) G ³	(E) G	(E) (G)	(E) (G)
Maine	E G M	(E) (G)	(E) (G)	(E) (G)
Maryland	E G M	(E) (G)	(E) (G)	(E) (G)
Massachusetts	E G M	E G	E G	E G
Michigan	E G M	(E) (G)	(E) (G)	
Minnesota				
Mississippi				
Missouri	E G	(E) (G)	E G	E G
Montana	E G M	(E) (G)	(E) (G)	(E) (G)
Nebraska				
Nevada	E G M	E G	E G	E G
New Hampshire	E G M	E G	E G	E G
New Jersey	E G M	(E) (G)	(E) (G)	(E) (G)
New Mexico	(E) (G)	(E) (G)	(E) (G)	(E) (G)
New York	E G M	E G	E G	
North Carolina	E G M	(E) (G)	E G	(E) (G)
North Dakota	E G	E G	E G	E G
Ohio	E G M	E G	E G	E G
Oklahoma	E G	E G	E G	E G
Oregon	E G	E G	E G	E G
Pennsylvania	E G M	E G	(E) (G)	E G
Rhode Island	(E) (G) M	(E) (G)	(E) (G)	(E) (G)
South Carolina	E G	E G	E G	E G
South Dakota				
Tennessee	E G	E G	E G	E G
Texas	(G)	G	(G)	(G)
Utah	E G	E G	E G	
Vermont	E G M	E G	E G	E G
Virginia	E G	(E) (G)	(E) (G)	(E) (G)
Washington	E G	(E) (G)	(E) (G)	E G
West Virginia	E G M	E G	E G	(E) (G)
Wisconsin	E G M	E G	(E) (G)	E G
Wyoming	E ²⁷ G M	E G	E G	E G

REGULATION CHART (Continued)

TIES, PRIVATE AND MUNICIPAL—(Continued)

(Italics—Orders Promulgated)

Prescribe Depreciation Rates Used in Accounts	Prescribe Annual and Other Report Forms	Continuing Property Records Required	Advance Sub- mission of Budgets Required	STATE
E G	E G			Alabama
E G	E G			Arizona
E G	E G			Arkansas
E G	E G			California
E G	E G			Colorado
E G	E G M	E G		Connecticut
E G	E G	E G		Delaware
(E) (G)	E G	E		Dist. of Columbia
E G	E G	1 2		Florida
E G	E G M			Georgia
(E) (G)	E G			Idaho
E G	E G			Illinois
E G	E G M			Indiana
(E) (G)	E G			Iowa
(E) (G)	E G			Kansas
(E) (G) 3	(E) (G) 3	E G		Kentucky
(E) (G) (M)	E G M	E G		Louisiana
(E) (G) M	E G M	E G		Maine
E G M	E G M	E G		Maryland
	E G			Massachusetts
				Michigan
E G	E G			Minnesota
(E) (G) (M)	E G M			Mississippi
				Missouri
				Montana
1 2 M	E G M	1 2		Nebraska
E G M	E G M	E		Nevada
E G M	E G M	E G	E G	New Hampshire
(E) (G)	(E) (G)			New Jersey
				New Mexico
(E) (G)	E G M	E G		New York
(E) (G) M	E G M	E G		North Carolina
E G	E G			North Dakota
E G	E G			Ohio
(E) (G)	E G			Oklahoma
E G	E G		E G	Oregon
E G M	E G M	E G		Pennsylvania
(E) (G) M	E G M			Rhode Island
E G	E G			South Carolina
				South Dakota
E G	E G			Tennessee
(G)	E G			Texas
E G	E G			Utah
E G M	E G M	E G		Vermont
(E) (G)	E G			Virginia
E G	E G		E G	Washington
(E) (G) (M)	E G M	E G		West Virginia
E G M	E G M			Wisconsin
E G M	E G M			Wyoming

CHAPTER VII

FRANCHISES

I. INTRODUCTORY

In the early years of utility regulation franchises were much more important than at present. The decline of the franchise followed the development of the modern public service commission. However, the franchise still offers an opportunity to local authorities to exercise a measure of control over utilities within the framework of state regulation.

DEFINITION. A franchise may be defined as a grant of rights, privileges, and immunities. Utility franchises may be granted directly by the state legislature, or the power to issue franchises may be delegated to some subordinate agency of the state, such as the municipality or the commission. In the early period of utility control the franchise was commonly issued by the municipality. The justification for delegating this power to municipalities arises from their need to exercise control over the use of the public streets and ways. Franchises are now commonly granted by both municipalities and the public service commission.

TYPES OF FRANCHISES. The modern public utility operates under three different grants of authority from the state or its subordinate agencies. In one sense the corporate charter is a franchise permitting individuals to constitute themselves an association or a corporate entity; this is the grant that brings the utility corporation into being. Though state laws may sometimes impose special restrictions on the incorporation of utility enterprises, the charter raises no significant questions that are peculiar to the regulation of public utilities and needs no further discussion here. The two other grants of authority which every utility must normally have are secured respectively from the state and from local governmental units. The first is the certificate of convenience and necessity; this authorizes the utility to operate as a public service corporation; it permits the corporation to carry on a public-service undertaking. The second is the so-called "local consent," the modern successor to the earlier municipal franchise. The local consent permits the company to make use of the public streets and ways in stringing its wires, laying its pipes, and operating its vehicles. The characteristics of these two latter types of franchise will be further considered.

2. THE MUNICIPAL FRANCHISE

ITS CHARACTER. Fundamentally, a municipal franchise is a permit granted by the municipality to a public utility, allowing the utility corporation to occupy the streets and public places for the construction, maintenance, and operation of its facilities. Virtually all of the local utilities occupy the public streets in some manner: the street railways and other local transportation agencies operate their vehicles therein; electric, gas, telephone, and water

utilities lay their pipes and mains under the streets, or string their service wires along and across them. Since the occupation of the streets might seriously interfere with their use by the public, it is necessary for the municipality to exercise a measure of control over utility plants and facilities.

In its simplest form, the municipal franchise is a grant of authority to occupy or to use the public streets. Ordinarily, however, the franchise imposes upon the utility a number of conditions for the protection of the public. Provisions with respect to health, safety standards, and the location of the facilities are to be found in nearly all municipal franchises. In addition, most franchises contain a variety of regulatory provisions which may prescribe rates, establish service standards, and involve matters of financial policy.

The franchise is a contract between the utility and the municipality, and since both parties are bound thereby it is important that its terms be carefully drawn with due regard to the legitimate interest of each. Inasmuch as the conditions under which the service is rendered are likely to change with the passing years, it is advisable that somewhere there reside the power to revoke and amend the franchise in the public interest.

THE TERM OF THE FRANCHISE. With respect to their duration, franchises fall into four categories: the perpetual franchise, the long-term franchise, the short-term franchise, and the indeterminate permit. The term of the franchise and the conditions under which its privileges may be terminated are critically important where regulatory functions are entrusted to the franchise.

The perpetual franchise. A franchise is seldom made perpetual by its terms. But if the franchise is silent with respect to its duration and if there are no general laws of the state imposing a limitation with respect to their duration, the courts may hold the franchise to be perpetual.¹

Experience with perpetual franchises has amply demonstrated that they are contrary to the public interest, especially where reliance is placed upon them for the exercise of a regulatory function.² The perpetual franchise leaves the community helpless to insist upon better standards of service or lower rates, whatever improvement in technology may occur and however the costs of rendering the service may fall. Where the franchise is exclusive as well as perpetual, the community is unable to rescue itself from the clutches of a recalcitrant utility even through the introduction of a competing service. In recent years new perpetual franchises have not been granted, and with the decline in the importance of some of the earlier utilities, outstanding perpetual franchises have become of less importance.

The long-term franchise. The long-term franchise sometimes has a duration of twenty-five to fifty years. This franchise must be drafted most carefully to protect the community under changing conditions—growth in the population and area of the municipality, technical improvements in utility services, and general economic changes. The advantages of the long-term contract center in the greater facility with which the utility can raise capital,

¹ *Owensboro v. Cumberland Tel. & Tel. Co.*, 230 U.S. 58 (1913); *Ohio Public Service Company v. Ohio*, 274 U.S. 12 (1927).

² In many states constitutional provisions prohibit irrevocable franchises or limit the term of all franchise grants.

and in its willingness to undertake relatively long-term investments. The dangers of the long-term franchise arise from the indifference of a secure management of the public's requirements and in the inability of the municipality to insist upon changes required by new conditions.

The long-term franchise may contain a recapture clause, combined with a provision for the amortization of the utility's investment out of its earnings. Such a clause requires the management to use surplus earnings for the amortization of the investment, presumably through the retirement of outstanding securities. At the end of the franchise period, the municipality has the right to assume title to the utility property on payment of the unamortized investment, or the municipality may even have the right to provide for a transfer of the property to another corporation, or the right to recapture may be operative at stated intervals after a designated period. This provision also gives the municipal officials an opportunity to insist upon such improvements in service, or such reductions in cost, as are made possible by changing conditions.

The protection afforded to the municipality under recapture provisions depends upon the ability of the municipality to go through with a recapture program. The municipality must have the legal power under its charter to undertake the operation of the utility enterprise; it must possess the financial resources to pay for the property; and it must have the option of either operating the property itself, or of turning it over to a new utility corporation.

The short-term franchise. A franchise having a term of ten years or less is considered a short-term franchise. Such franchises are ordinarily granted with the privilege of renewal for a similar period, and so long as the operation of the utility is satisfactory, such renewals are made as a matter of course. The theory of the short-term franchise is that the management will strive to justify the renewal of the franchise by rendering the best possible service. The renewal period also affords the municipality the chance to insist upon those changes which new and different conditions make desirable.

The serious disadvantages of the short-term franchise for the utility deserve attention. If there is any doubt that the franchise will be renewed it becomes increasingly difficult, if not impossible, to finance the utility's capital requirements through the issuance of long-term bonds, for investors are unwilling to buy obligations that run beyond the expiration of the franchise. If the financing is limited to short-term obligations or bank loans the cost of capital is unnecessarily high, and the utility is faced with the possibility that it will be embarrassed by an inability to secure an extension of the credit. Of course, any inability to raise new capital may force a sacrifice of service standards and would certainly stand in the way of any extensions and improvements in the service.

Since the establishment of state regulation, the short-term franchise is almost as much an anachronism as the long-term or perpetual franchise; and certainly the inability of any community to finance the purchase of utility enterprises makes the privilege of recapture of little practical importance either as a corrective for a difficult situation or as a threat to hold utility management to high standards of service.

The indeterminate permit. The indeterminate permit, or the terminable franchise, provides for no definite termination date. The utility continues to enjoy the privileges of the franchise until the municipality acts to take over the property. In practice this means that the franchise endures as long as the service continues to be satisfactory. The terminable permit requires statutory authorization, which has been forthcoming in eighteen states.³

If the municipality terminates the franchise it must pay the purchase price of the property. It is therefore of crucial importance that the franchise define precisely the procedure by which the property shall be valued. The terminable franchise may contain specific provisions with respect to the determination of the rate base or it may leave the problem of rate regulation to the state commission. Where the franchise defines the rate base, the purchase price is normally identical with the rate base and both are commonly defined in terms of investment.

The advantages of the indeterminate franchise to the utility are obvious. The company is secure in the possession and operation of its property. If its service and rates are satisfactory, it has what is in effect a perpetual franchise. Negotiations for franchise renewal, with their accompaniment of political bickering and controversy, no longer plague the management, and improved public relations result. Under these conditions the investment of capital is readily induced on favorable terms. Expenditures for improvements and extensions are willingly undertaken, since all of the legitimate investment must be fully compensated if the municipality decides to take possession of the property. Service standards are high, for the management has every inducement to maintain satisfactory public relations with its clients.

The advantages of the indeterminate franchise for the municipality and for consumers are equally apparent. By inducing the investment of capital on favorable terms the cost of service is kept lower than it would be with other forms of franchises. Higher service standards are assured. Taking the utility question out of local politics is likely to result in higher standards of conduct on the part of municipal and utility officials, for when utilities were charged with political corruption it was usually forced upon them by the necessity of negotiating franchise renewals. It removes the need for setting up amortization funds, thus reducing the cost of service to consumers, while making available larger dividends to investors. Although relative permanence of operation and of service is provided, the municipality retains full control with respect to the future conduct of the utility. Since the indeterminate permit gives the municipality the right to purchase the utility property at a fair price, it is possible for municipal ownership and operation to be undertaken without the prolonged delays involved in holding elections, negotiating with respect to the purchase price of the property, and appealing to the courts when differences of opinion develop. The very fact that public ownership and operation can be instituted so simply gives the management an added incentive to avoid the creation of any sentiment favorable to such public ownership.

³ Arkansas, California, Colorado, Connecticut, Idaho, Illinois, Indiana, Kansas, Louisiana, Maryland, Missouri, Montana, New Hampshire, North Dakota, Ohio, South Carolina, Vermont, and Wisconsin.

The indeterminate permit has not escaped all criticism. It has been opposed on the ground that it affords the utility a perpetual franchise. If for any reason the municipality is without the power to take over the ownership and operation of the utility enterprise, this is true. But if the service is so satisfactory that there is no sentiment in favor of public operation of the utility enterprise, the public interest is not prejudiced by the relative permanence of the utility's right to operate. Under an indeterminate permit the municipality surrenders the right to establish a competing plant without purchasing the property of the existing utility, but even this objection is not serious if the terms of the franchise make it possible for the municipality to acquire the property at a reasonable price, for the only justification for a competing plant would be the inability to purchase the utility property at a fair and reasonable price.

The expiration of the franchise. The respective duties of the utility and the city do not terminate with the expiration of the franchise period; as long as the utility continues to render service it is under an obligation to serve efficiently, and it is entitled to reasonable co-operation from the municipal officials.⁴

The relationship between the city and the utility company can be terminated at the will of either party,⁵ but both the municipality and the utility are entitled to reasonable notice before either acts to terminate the operation of the utility.⁶ As long as it continues to serve the public, the utility is, of course, entitled to reasonable return on its investment.⁷

REGULATORY FUNCTIONS OF THE FRANCHISE. *Effect of state regulation.* Until the end of the first decade of the twentieth century the franchise performed an important regulatory function. In return for the privileges granted by the municipality, the utility was contractually bound to render the service and to maintain the stipulated standards. It was customary for the franchise to establish maximum rates, but within these limits the utility was free to make the maximum possible net income. In some instances the franchise even went so far as to define the plant and the physical facilities with which the service was to be rendered.

The weaknesses of the franchise as a regulatory device have been extensively debated. (1) Fundamentally, the inadequacies of the franchise as an instrument for regulation have been attributable to the attempt to deal with a dynamic and changing situation in terms of static requirements. (2) Where the franchise fixed maximum rates, changing economic conditions often rendered the maximum meaningless or harmful: if costs subsequently declined, the utility was able to maximize its income without charging rates as high as the franchise permitted; but when the future brought an increase in costs of operation, insistence upon the franchise rate deprived the utility of the

⁴ *Iowa City v. Iowa City Light and Power Co.*, 90 F. (2d) 679 (C.C.A. 8th, 1937).

⁵ *Laighton v. City of Carthage*, 175 Fed. 145 (C.C. Mo., 1909).

⁶ *Cincinnati Railway Co. v. Cincinnati*, 44 N.E. 327 (1894).

If the city allows the utility to make valuable improvements and further investments in its property the reasonable period of notice may be correspondingly lengthened. (*State v. Des Moines Railway*, 159 Iowa 259, 140 N.W. 437 [1913].)

⁷ *Denver v. Denver Union Water Co.*, 246 U.S. 178 (1918); *Elizabeth City Water & Power Co. v. Elizabeth City*, 188 N.C. 278 (1924).

revenue necessary to render adequate service, to the detriment of the consumer. (3) The service standards were defined in terms of the technology existing at the time when the franchise was granted. Improvements in the arts of utility operation made possible a superior type of service, if such appeared to be economically desirable to the company and if such were permissible under the terms of the franchise. Where communities experienced rapid development, service standards which were satisfactory to the small town became less than satisfactory for the larger community. Where facilities were rigidly defined, the utility was often handicapped in making improvements that would be productive of superior service or lower operating costs. (4) The political controversies attendant upon the renewal of franchises were responsible for much of the corruption for which utilities have been blamed; the attention of the management was diverted from its own proper function to political affairs; uncertainties with respect to the terms of renewal increased the cost of capital to the corporation and constituted an obstacle to the investment of funds; and the whole atmosphere of controversy was productive of ill-will and distrust between the public and the utility.

The effect of state regulation upon the position of the utility franchise has varied with the thoroughness with which the public service commission has undertaken to control the activities of utility companies. According to the modern principles of regulation, the utility is obliged to render service conforming to contemporary standards and to charge only reasonable and non-discriminatory rates. In theory, the commission exercises a continuing supervision over the activities of utility companies and is prepared to investigate and issue mandatory orders whenever the public interest requires. Yet commissions are notoriously understaffed; they are often inadequately financed; and they are all too often not in a position to take the initiative in safeguarding the legitimate interests of the consumer. Since this is so, there is still a function for the municipality in the protection of the consumer's interest in adequate service at reasonable rates.

The municipality's responsibilities with respect to the control of utility companies can be most effectively realized through the medium of the franchise. Also, if the municipality looks forward to the public ownership and operation of the local utilities, the granting of the franchise offers a favorable opportunity to create conditions that will not obstruct that development. Where state regulation is ineffective, the franchise may impose upon the utility certain conditions with respect to the determination of the rate base and the establishment of rates. These matters can be more satisfactorily discussed in connection with the specific provisions of the franchises.

A perplexing jurisdictional question in the regulation of public utilities concerns the status of franchise provisions following the establishment of state regulation through a public service commission. Where the franchise has been granted under a statute that was enacted subsequent to the establishment of the commission, the franchise presumably takes precedence over the authority of the commission, unless there are specific statutory reservations with respect to the commission's powers. Where the franchise antedates the creation of the commission, the statute under which the commission operates may

specify that its authority shall supersede that of the municipality, and the commission may be charged with the establishment of reasonable rates, franchise provisions to the contrary notwithstanding. In other instances, the statute may specify that the franchise is to continue in effect. The puzzling cases are those that involve franchises granted prior to the establishment of the commission, where the law is silent with respect to the commission's authority relative to franchises. Where this situation prevails, the decisions of the courts have been conflicting—some holding that the commission's authority is superior to that of the municipality, and others holding that the commission may not interfere with the franchise provisions.⁸

The location of utility facilities. Electric, gas, and water utilities are not usually restricted with respect to the location of their installations, but are allowed to use such streets as are convenient and economical for the rendition of service. The telephone and electric utilities may be required to make joint use of poles in order that the streets may not be unnecessarily cluttered. The municipality may require that wires be placed underground, particularly in the central streets, where the use of overhead wires would constitute a fire hazard or be otherwise objectionable. The city also commonly reserves the right to occupy certain of the underground conduits with its wires for purposes of fire alarm, police signal, and other public activities.

The municipal franchises are ordinarily specific with respect to the location of the local transit routes, whether by street railways or by buses, and the transit company may not use streets other than those so specified. Even where the franchise permits the utility to choose its own location originally, the company is not free to abandon established lines and relocate them elsewhere.⁹ Ordinarily the restriction on the transit company is more formal than practical, since municipal officials are usually quite willing to grant requests with respect to the location or relocation of routes.

Rates and charges. It was customary for the early municipal franchise to contain provisions fixing the maximum rates which the utility should thereafter charge, and these rate provisions constituted a contract binding alike upon the municipality and the company.

Franchise provisions with respect to rates are not generally held to suspend the power of the state to control rates through its public service commission. Under normal circumstances neither the contract clause nor the due-process clause has the effect of limiting the power of the state in the proper exercise of the police power to undertake regulatory measures.¹⁰

The principle that the state commission's authority may supersede a municipal contract with respect to rates was established in cases which arose on the initiative of the companies when rising prices and mounting costs threatened the solvency of the utilities and the continuity of their service. In such situations it might be said that the state commission was resuming the authority which the legislature had previously granted to the municipality and was acting in the place of the municipality, so that the contract was modified by

⁸ This matter has been discussed in some detail in Chapter IX.

⁹ *Atlantic & Birmingham Ry. v. Kirkland*, 129 Ga. 552, 59 S.E. 220 (1907); *Brown v. Atlantic Ry.*, 126 Ga. 248, 55 S.E. 24 (1906).

¹⁰ *Atlantic Coast Line R. Co. v. Goldsboro*, 232 U.S. 548 (1914).

consent of both parties. But the authority of the state commission to supercede contract rates and to require utilities to charge only fair and reasonable rates has also been established in instances involving a reduction in contract rates. However, despite the fundamental character of the police power, it has been held that a state may authorize a municipality to establish rates for public utilities by agreement, and thereby to suspend for a term of years the exercise of the legislative powers to fix the just compensation for the utilities' service.¹¹ It is the policy of the courts, well-founded in the public interest, to resolve all doubts in favor of the continuance of the state's power to regulate utility charges.¹² But where the courts find a clear intention to permit for a designated term the suspension of the exercise of the legislative control over rates, the franchise rate will be sustained however excessive the charges may be or however inadequate the utility's earnings may be.¹³

The economic wisdom of that doctrine which would permit suspension of the state police power even for a limited term of years may be seriously questioned. To permit the utility to charge rates which yield more than a reasonable return upon its investment is contrary to the first principle of modern regulation. On the other hand, it is an essentially fallacious policy which would seek to benefit consumers by holding the utility's earnings at a level insufficient to cover the full costs of service; the unfortunate consequences of the policy in the form of higher capital costs and a deterioration in the quality of service are inescapable.

One may even go further and say that the whole philosophy of a fixed franchise rate for utility corporation is an anachronism. Rate regulation is satisfactory only when it provides a flexible responsiveness to changing economic conditions. Historically, our experience with fixed maximum rates has been quite unsatisfactory. The rates established for the purpose of protecting the consuming public have actually served to safeguard unearned increments for utility investors, since the rapid development of the industry was accompanied by successive reductions in the cost of performing the service; such at least was the situation up to the time of the World War. The rising costs of the World War period compelled commissions to step in and suspend the rate provisions of franchises in the interest of assuring continuity of the service.

Under modern conditions, may the franchise serve as an effective instru-

¹¹ *Detroit v. Detroit Citizens' R. Co.*, 184 U.S. 368, 382 (1902); *Vicksburg v. Vicksburg Water Works Co.* 206 U.S. 496, 508, 515 (1907); *St. Cloud Public Service Co. v. St. Cloud* 265 U.S. 352, 355 (1924); *Railroad Comm. v. Los Angeles Ry. Corp.*, 280 U.S. 145, 151 (1929).

The suspension of the legislative power with respect to the regulation of utility rates may be, as the courts have noted, for a limited period of time only; but the cases have not been specific as to what term of years should be regarded as grossly excessive for the suspension of this fundamental governmental power.

¹² *Railroad Comm. v. Los Angeles Ry. Corp.*, 280 U.S. 145, 152 (1929). See also *Providence Bank v. Billings*, 29 U.S. (4 Pet.) 514, 561 (1830); *Stone v. Farmers' Loan & Trust Co.*, 116 U.S. 307, 325 (1886); *Freeport Water Co. v. Freeport*, 180 U.S. 587, 599 (1901); *Stanislaus County v. San Joaquin King's River Co.*, 192 U.S. 201, 210 (1904); *Puget Sound Traction Co. v. Reynolds*, 244 U.S. 574, 579 (1917).

¹³ *Detroit v. Detroit Citizens' R. Co.* 184 U.S. 368, 382, 389 (1902); *Vicksburg v. Vicksburg Water Works Co.*, 206 U.S. 496, 508, 515 (1907); *Home Tel. & Tel. Co. v. Los Angeles*, 211 U.S. 265 (1908); *St. Cloud Public Service Co. v. St. Cloud*, 265 U.S. 352, 355 (1924); *Railroad Comm. v. Los Angeles Ry. Corp.*, 280 U.S. 145, 151 (1929).

ment for regulation with respect to utility rates and charges? As long as state commission regulation of utility rates is less than completely satisfactory, the answer to this question must be in the affirmative. Two effective courses of action are open to the municipality. First, it may choose to adopt a full-fledged service-at-cost franchise.¹⁴ Secondly, the municipality may take advantage of the granting of the franchise to bind the utility company to accept a rate base defined in the franchise.

The ineffectiveness of state regulation of utility rates is to be attributed largely to disagreements and controversies with respect to the determination of the present-fair-value rate base. A municipality might overcome this difficulty by binding the local utility to accept a rate base defined in terms of the actual investment in the property used in the public service. The actual regulation of rates might still be left to the public service commission. This procedure would be most practical in the case of a utility operating largely within the municipality in question.¹⁵

Service. Municipal franchises commonly contain provisions defining the service standards which the utility is to observe. With the exception of street railways, these provisions have been of little practical importance because improvements in technology have made it possible for the utility to render service superior to that required by the franchise.

The obligation of the utility to continue service under the terms of its franchise has frequently been a matter of dispute. In this respect, franchises fall into three classes—the permissive charters, the mandatory franchises, and those franchises which are neither clearly permissive nor clearly mandatory. Whether the utility will be required to continue its service depends upon the court's interpretation of its franchise contract. Where the franchise imposes neither an express nor an implied contract to continue service, the utility is free to discontinue operation.¹⁶ In most states the abandonment or discontinuance of the utility service requires the formal permission of the commission.¹⁷ The Supreme Court has held that the permissive charter does not require a company to continue its operations at a loss; hence where it is reasonably certain that future operations cannot avoid a loss, the company may cease its operations; for if the state were to require it to continue operation at a loss, the utility would be deprived of its property without due process of law.¹⁸

If the franchise constitutes either an express or an implied contract requiring the continuance of operation, the utility may not abandon the service or discontinue a part of its operations. The question whether the franchise imposes such an expression or implied obligation upon the utility is one for the courts to decide. The precedents are clear that the utility will not be allowed to abandon an unprofitable branch or part of its service as long as it continues

¹⁴ The character of these franchises will be discussed subsequently.

¹⁵ Bauer, *Standards for Modern Public Utility Franchises*, pp. 19-21.

¹⁶ *Lucking v. Detroit & Cleveland Navigation Co.*, 265 U.S. 346 (1924). See also *Gress v. Village of Fort Loramie*, 100 Ohio St. 35, 125 N.E. 112 (1919).

¹⁷ *Hubbard v. Colorado Title & Trust Co.*, 65 Colo. 472 (1918).

¹⁸ *Railroad Comm. v. Eastern Texas R.R.*, 264 U.S. 79, 85 (1924); *Georgia Power Co. v. Decatur*, 281 U.S. 505 (1930).

operations under the franchise.¹⁹ Where two or more services are bound together in a single contract or franchise the utility may not abandon the unprofitable service.²⁰

Where the charter is not clear with respect to the utility's obligation to continue the service, that obligation may be implied from certain provisions of the contract. A grant of the privilege of eminent domain has been interpreted to impose upon the utility an implied obligation to continue the service.²¹ Also, where the state had given the utility a grant of money in aid of construction the utility was not permitted to abandon the service without first repaying the grant.²²

The state may, of course, release the utility from its contractual obligation to continue service. Such a release from continuance of service would be appropriate if it appears that the public does not need the service. Where the company is operating at a loss, commissions have interpreted the insufficient demand of the utility's service as evidence that the public no longer requires the service.²³ Similarly, a shortage or an exhaustion of the natural-gas supply would be a justification for a discontinuance of that service.²⁴ As with rates, so with continuance of service: contracts are not effective against the sovereign will of the state, and the utilities may be absolved from their contract with the municipality if the commission finds such to be in the public interest.²⁵

Where the utility is required to continue an unprofitable branch or an unprofitable service the cost of that continuance probably falls on the consumers of the more profitable service, and it is questionable whether public policy should require one class of consumers to supply the means wherewith another group receives a service for which they fail to pay the full cost. If the unprofitable branch or service imposes a scarcely perceptible burden upon a large number of consumers, the convenience which the continuance of the service affords to a small number of consumers may be a justification.

OTHER FRANCHISE PROVISIONS. *The transfer of franchises.* The early franchises usually provided that their rights should accrue to successors or assignees of the original holders of the franchise. As a matter of public policy, the transfer of a utility franchise should be effective only with the affirmative approval of a public authority. In theory, the commission should exercise the

¹⁹ *Fort Smith Traction Co. v. Bourland*, 267 U.S. 330 (1925); *Georgia Power Co. v. Decatur*, 281 U.S. 505 (1930).

²⁰ *Georgia Power Co. v. Decatur*, 281 U.S. 505 (1930); *Spartanburg v. South Carolina Gas & Electric Co.*, 130 S.C. 125, 125 S.E. 295 (1924).

²¹ *State v. Bullock*, 78 Fla. 321, 82 So. 866, 867 (1919).

²² *State v. Beaton*, 190 Iowa 216, 178 N.W. 1 (1920).

²³ *Re Rockland, South Thomaston & St. George Ry.*, P.U.R. 1918E, 877 (Me., 1918); *Re Exeter, Hampton & Amesbury St. Ry.*, P.U.R. 1919B, 251 (N.H., 1919).

²⁴ *Re Ohio Fuel Supply Co.*, P.U.R. 1921A, 628 (Ohio, 1920).

²⁵ ". . . Powers possessed by the legislature may be delegated by it to a municipality, a commission, or any other creature of the state, for their exercise in the public interest; powers thus delegated may in the same manner be withdrawn or modified; and the legislative agent has, in pursuance to these powers, entered into agreements with corporations. . . . The undoubted weight of authority . . . is that the legislature as the repository of power may, either directly or through a commission . . . modify the terms of such agreement. . . ." (*Re Belt Line Ry. Co.*, P.U.R. 1919D, 56, 71 [N.Y., 1919].)

same critical care in approving a transfer of the franchise that is required with respect to the original grant thereof; it should be satisfied as to the ability of the new possessor to afford satisfactory service at a reasonable rate, and in other ways to fulfill the obligations of a public service corporation.

Arbitration. Franchises also commonly contain a provision with respect to the arbitration of disagreements with respect to interpretation, a recognition of the fact that the franchise, however carefully drafted, cannot be so specific and definite as to avoid all questions. If no provision is made for arbitration and if direct negotiation is unsuccessful, then disputes must be carried to the courts.

Franchise taxes and other forms of compensation. The early franchises were assumed to be very profitable privileges, and it was customary for the municipality to impose certain charges on the utility, either a single lump-sum payment or an annual franchise tax.²⁶

Under modern regulation of public utility rates, with its objective of holding charges to the level necessary to cover costs, there is ordinarily no justification for the franchise tax. If regulation is successful in its objective, there are no excess profits to be recaptured through the franchise tax. If, nevertheless, the utility is required to pay a tax, the commission must recognize this tax as a part of the operating costs to be borne ultimately by the consumer.

THE LOCAL CONSENT. The responsibility for awarding the certificate of convenience and necessity (the modern franchise right to operate as a public utility) is lodged with the public service commission. In most states, however, the utility is also required to secure the approval of local authorities for the occupation of the public streets and ways; such approval or permission is called a "local consent." Since the local authorities might fail to act on a petition for a local consent, it is customary to confer upon the commission the power to grant such consents where the local authorities have failed to act. If the local consent is refused, the utility should have a right of appeal to the commission and the latter should have authority to override the municipal authority if this appears to be in the public interest.

Authority to grant a local consent is ordinarily interpreted as carrying with it the right to attach conditions to the consent. Very often these conditions are burdensome to the company and it is therefore necessary and proper that the utility should have the right to appeal from the municipal authorities when the conditions appear contrary to the public interest. Conditions with respect to the schedules to be observed by the utility company illustrate the kind of restriction that might interfere with satisfactory service for other communities, and would therefore not normally be permitted to stand by the commission. Where the utility operates in more than one municipality it would not be appropriate to allow the local authorities to determine the reasonable rate of fare to be charged; that responsibility rests with the state commission. Specifications with respect to the type of equipment to be used would also not be

²⁶ In addition, franchises often carried an obligation to render a variety of free services: water companies were required to supply free water to public buildings; street railways were required to pave between the tracks and sometimes to pave the entire width of the street, and even occasionally to provide curbs and sidewalks; electric companies might be asked to provide free street lighting.

an appropriate matter for local control. In fact, it would appear that the local authorities can do little more than specify the public facilities within the municipality which the utility shall have the right to use.²⁷ The general principle would appear to be that the local authorities may not impose any conditions which would in any way obstruct the utility in rendering service that is satisfactory to consumers in other jurisdictions.

3. THE CERTIFICATE OF CONVENIENCE AND NECESSITY

The certificate of convenience and necessity is an American contribution to the instruments of regulation. All but eighteen states require certificates of convenience and necessity before a corporation can enter upon the rendition of service as an electric or as a gas utility. The more extensive regulation of the motor carrier has increased the importance of the certificate of convenience and necessity, and it is extensively required with respect to motor carriers. If all types of utilities be included in the survey, it would be found that most of the states make some provision for the use of the certificate of convenience and necessity.

ITS NATURE. The certificate of convenience and necessity is a revocable permit to operate as a public utility, granted commonly by the state public service commission.²⁸ Without a certificate of convenience and necessity, entry upon the rendition of a public utility service is ordinarily not permitted. The recipient of the certificate thereby acquires no property right.²⁹ The possession of the certificate of convenience and necessity gives the utility no contract with the state.³⁰ Its fundamental objective is the protection of the consuming public. It is not the purpose of the certificate to afford protection to the utility company as such, although the protection of the consuming public is ordinarily interpreted as requiring the protection of the utility from unnecessary and wasteful competition.³¹

In the protection of the consuming public, many subordinate objectives become significant. The requirement of a certificate of convenience and necessity may enable the commission to prevent the needless multiplication of companies serving the same territory, and at the same time to avoid a wasteful duplication of capital facilities, thus keeping the investment at the lowest figure consonant with satisfactory service. By protecting the utility from unnecessary competition, the risks inherent in utility investments are reduced and the cost of capital is thereby kept as low as the conditions of the invest-

²⁷ *Re Eastern Greyhound Line*, P.U.R. 1933A, 89 (N.Y., 1932).

²⁸ *Cannonball Transportation Co. v. American Stages*, 53 F. (2d) 1051 (S.D. Ohio, 1931).

²⁹ And since the utility acquires no property right, the certificate does not add to its capital assets. *Penna. R. Co. v. Comm.*, 116 Ohio St. 80, 155 N.E. 694 (1927).

It may be noted that in one instance the Supreme Court has interpreted the certificate of convenience and necessity as a franchise and held that the certificate was a property right within the protection of the due-process clause of the Fourteenth Amendment. (*Frost v. Corp. Comm.*, 278 U.S. 515, 519 [1929].)

³⁰ *Roberto v. Dept. of Pub. Utilities*, 262 Mass. 583, 160 N.E. 321, 322 (1928).

³¹ *Illinois Power & Light Co. v. Commerce Commission*, 320 Ill. 427, 151 N.E., 236 (1926). *Sandpoint Water & Light Co. v. Humbird Lumber Co.*, P.U.R. 1918B, 535 (Idaho, 1918). With respect to the protection of existing utilities from unfavorable competition, see *Choate v. Commerce Commission*, 309 Ill. 248, 141 N.E. 12 (1923).

ment market permit. The requirement of the certificate also affords the commission an opportunity to appraise the financial and technical competence of the corporation that would undertake the rendition of an essential public service.

WHEN THE CERTIFICATE IS REQUIRED. The certificate of convenience and necessity is presumably required both before a corporation may enter upon its activities as a utility enterprise and on the occasion of any major extension of its service into new territory. With respect to those companies which were already operating as public utilities before the enactment of the statute requiring the certificate, some states required no certificate;³² other states required prior operators to apply for the certificate and it was granted as a matter of course.³³ Even though a utility has operated prior to the enactment of the law requiring a certificate of convenience and necessity, if it ceases operation, it must thereafter obtain a certificate before it may re-enter the business.³⁴ Ordinarily the enlargement of the business or the extension of operations on the part of the existing utility requires an additional certificate of convenience and necessity;³⁵ although in a number of jurisdictions, a utility may extend its service into contiguous territory that is not already supplied with the service without the necessity of applying for an additional certificate.³⁶ Motor carriers are in a somewhat special category and they are customarily required to secure an additional certificate of convenience and necessity before they may extend their service.³⁷

CONSTITUTIONALITY. Long-continued usage as well as the decisions of the court have clearly established that the certificate of convenience and necessity is a constitutional regulatory device where the business to which it applies is affected with the public interest. To require such a certificate of convenience and necessity, and to deny it to one who does not meet the standards established by the legislature or the commission, does not constitute a deprivation of property without due process of law.³⁸

There have been decisions in the Supreme Court which have been restrictive of the use of the certificate of convenience and necessity by the state. Such a decision was that in *Frost v. Corporation Commission of Oklahoma*,³⁹ in which the court held that the state statute was unconstitutional in not requiring co-operative cotton gins to secure the same certificate of convenience and necessity which was required of privately owned gins that operated for profit. In a later decision the Supreme Court refused to allow the State of Oklahoma to require a certificate of convenience and necessity as a condition of entry

³² California, Rhode Island, Kansas, Maryland, and New Jersey.

³³ Washington, Ohio, Louisiana, South Carolina, Virginia, and Iowa.

³⁴ *Re Red Ball Transportation Co.* P.U.R. 1923E, 418 (Iowa, 1923); *Scranton Taxi Co. v. Flannagan*, P.U.R. 1928B, 857 (Penna., 1928).

³⁵ *Golden Gate Ferry Co. v. Commission*, 259 Pac. 745 (Cal., 1927).

³⁶ *Public Service Co. of Colorado v. Loveland*, P.U.R. 1928C, 35 (Colo., 1928).

³⁷ *Gilmer v. Commission*, 247 Pac. 284 (1926). See also *Price v. Pickwick Stages*, P.U.R. 1922E, 856 (Cal., 1922).

³⁸ *Willis v. Buck*, 81 Mont. 472, 263 Pac. 982 (1928); *Barbour v. Walker*, 126 Okla. 227, 259 Pac. 552 (1927); *Farmers & M. Co-op. Tel. Co. v. Boswell Tel. Co.*, 187 Ind. 371, 119 N.E. 513 (1918); *Restivo v. West*, 149 Md. 30, 129 Atl. 884 (1925); *Re Sioux Falls Traction System*, 56 S.D. 207, 228 N.W. 179 (1929); *Pirie v. Comm.* 72 Colo. 65, 209 Pac. 640 (1922).

³⁹ 278 U.S. 515 (1929).

into the business of ice manufacture on the ground that the business was not affected with a public interest.⁴⁰ Despite the decision, however, it is clear that where the business is one that is an appropriate object of regulation, the requirement of the certificate of convenience and necessity is wholly proper and constitutional.⁴¹

State jurisdiction with respect to interstate utilities. The authority of the state to require a certificate of convenience and necessity has been frequently challenged in connection with utilities operating in interstate commerce. Most of these utilities have been motor carriers and other transportation companies. While the mere fact that a carrier is operating in interstate commerce does not prevent the state from requiring a certificate, that fact limits the scope of the state's authority to refuse a certificate. In general, the dividing line between state and federal authority in the matter of interstate commerce may be said to be drawn so that the state may seek to promote safety upon the highways and conservation in their use by any measures which do not impose a burden upon interstate commerce.⁴² In short, the state may regulate the matter of the use of the highways although it may not regulate the person who may operate the utility service. This issue was raised dramatically in a case involving a motor carrier proposing to operate in Washington and Oregon. The necessary certificate was granted by the State of Oregon but refused by the State of Washington on the grounds that the territory was already adequately served by other carriers. The matter was carried to the Supreme Court where it was held that the refusal of the State of Washington to grant the certificate constituted a burden upon interstate commerce.⁴³

FINDINGS PREREQUISITE TO GRANTING A CERTIFICATE OF CONVENIENCE AND NECESSITY. In the fulfillment of their functions with respect to certificates of convenience and necessity, commissions have interpreted their powers with reference to the objectives sought to be achieved. A broad and inclusive meaning has been given to the word "public." Public convenience refers to the convenience in accommodation which the entire community will derive from the operation of the utility, not to the advantage which private persons may derive from being allowed to operate as a utility.⁴⁴ The two words "convenience and necessity" have generally been construed together. It need not be

⁴⁰ *New State Ice Co. v. Liebmann*, 285 U.S. 262, 278-279 (1932). Justices Brandeis and Stone dissented vigorously from the proposition that the federal Constitution guarantees the individual an absolute right to enter the ice business however detrimental the exercise of that right might be to the public welfare.

⁴¹ It may be recalled that the more recent decisions of the Supreme Court have been much more generous in their recognition of the authority of the state to regulate businesses which heretofore have not been thought of as included in the public utility category. See Chapter I.

⁴² *Chambersburg, Greencastle & Waynesboro St. Ry. Co. v. Hardman*, P.U.R. 1921C, 628 (Penna., 1921); *E. St. Louis, Columbia & Waterloo Ry. Co. v. Dingerson*, P.U.R., 1924C, 127 (Ill., 1924).

⁴³ *Buck v. Kuykendall*, 267 U.S. 307, 315-316 (1925). The courts have not permitted carriers to use interstate operation as a subterfuge to escape state control. Where the carrier only occasionally transports an interstate passenger, or where it deliberately plans its route for the purpose of crossing a state line, it has been held that the carrier does not thereby become an interstate utility beyond the jurisdictional control of state authority. (*Grubb Co. v. Comm.*, 281 U.S., 470 [1930]). See also *Inter-city Coach Co. v. Atwood*, 21 F. [2d] 83 [D.R.I., 1927]; *Detroit-Cincinnati Coach Line v. Comm.*, 119 Ohio St. 324, 164 N.E. 356 [1928].)

⁴⁴ *Red Star Transportation Co. v. Red Dot Coach Co.*, 220 Ky. 424, 294 S.W. 419 (1927).

established that the service is absolutely indispensable to the public before a certificate will be issued.⁴⁵ In general, it may be said that the requisite showing with respect to convenience has been made when the commission is convinced that there is a reasonable public demand for the service and that the service will accommodate the public.⁴⁶

The applicant for a certificate of convenience and necessity is required to file with the commission full data with respect to the service to be rendered, the facilities to be used, the rates and charges to be observed, and the financial status of the applicant. The commission holds public hearings and affords an opportunity to all affected by the application to appear.

All the conditions and circumstances surrounding the operation of the proposed utility are considered by the commission in determining whether or not the certificate should be issued. These circumstances and conditions may be summarily reviewed under seven headings.

(1) The commission must first be assured that there exists an ample demand for the utility's service. It must also appear that the service is not being adequately supplied by existing facilities and agencies. This requirement is appropriate, not only for the protection of the investor, but also in order that the utility may have sufficient revenue to be able to provide a satisfactory service.⁴⁷

(2) The applicant must be qualified to render an adequate service at reasonable rates. Not to insist upon this condition might deprive the public of a more adequate service that might subsequently become available should the present applicant not be allowed to enter the field.⁴⁸

(3) It must appear that the applicant possesses the requisite financial resources to provide the facilities required for adequate service according to modern standards.⁴⁹

(4) The character of the applicant is also a matter for consideration. In some states the statutes forbid the issuance of a certificate to other than a domestic corporation.⁵⁰ If the applicant has previously possessed a certificate or operated as a public utility, his record will be a matter of some significance. The skill, experience, and business ability of the applicant may be important considerations.⁵¹

(5) A commission is often confronted with the necessity of choosing between two applicants. Priority in the filing of the application will not be conclusive in determining the commission's selection.⁵² However, priority in

⁴⁵ *Re Troy Auto Car Co.*, P.U.R. 1917A, 700, 706 (N.Y., 1916). See also *Re Donovan*, P.U.R. 1921D, 488 (Colo., 1921).

⁴⁶ *Abbott v. Comm.*, 48 R.I. 196, 136 Atl. 490 (1927).

⁴⁷ *Re Ritter*, P.U.R. 1923B, 530 (Ill., 1923); *Re Eckroth*, P.U.R. 1926A, 356 (Penn., 1925); *Billings-Sheridan Bus Line*, P.U.R. 1928B, 816 (Mont., 1928).

⁴⁸ *Union Co-op. Tel. Co. v. Comm.*, 206 Wis. 160, 239 N.W. 409 (1931); *Gilbert v. Comm.*, 131 Ohio St. 392, 3 N.E. (2d) 46 (1936); *Re Kansas Pipe Line & Gas Co.*, 30 P.U.R. (N.S.) 321 (F.P.C., 1939).

⁴⁹ *Re Universal Bus Co.*, P.U.R. 1923B, 90 (Ill., 1922); *Re Buffalo Jinney Owners Assn.* P.U.R. 1923C, 645 (N.Y. 1923); *Re Rhoney*, P.U.R. 1923D, 623 (N.Y., 1923).

⁵⁰ California, Illinois, Indiana, Rhode Island. *Re Ritter*, P.U.R. 1923B, 530 (Ill., 1923).

⁵¹ *Re Austin Bros. Transfer Co.*, P.U.R. 1923C, 220, 222 (Ill., 1923).

⁵² *State v. Dept. of Public Works*, 223 Pac. 1048, 129 Wash. 5 (1924).

establishing the service may be important.⁵³ The promise of better service or lower rates, or superior financial resources and superior equipment, may determine the decision between rivals.⁵⁴

(6) A most difficult question confronts the commission when a utility already occupies the field and the granting of the certificate of convenience and necessity would set up direct or close competition. The modern theory of regulation does not contemplate direct competition between utility companies. Usually the certificate will be refused where existing companies are providing adequate and satisfactory service.⁵⁵ If the existing utility is not charging reasonable rates, and if it is not serving satisfactorily the entire territory, the commission may decide that the public interest will be advanced by issuing a certificate to a new competitor.⁵⁶ Customarily, however, the existing utility will be afforded an opportunity to improve its service,⁵⁷ and if the commission can be persuaded that the causes of past dissatisfactions will be removed, it is probably in the public interest that competition be not permitted. The duty of the commission to protect the existing companies where adequate service is being rendered may extend even to those situations where the applicant proposes to render a different type of service, as, for example, where a motor carrier proposes to operate parallel to a steam railway. In some instances the threat to the financial structure of the railroad has been deemed an adequate reason for refusing a certificate to a competing motor carrier.⁵⁸ However, if it clearly appears that the existing service is inadequate or unsatisfactory and is not likely to become satisfactory, the authorization of a competing service is justified.⁵⁹

(7) In order to safeguard the legitimate interests of the various localities in which the applicant proposes to render service, the statute may require that the prior consent of local authorities be secured. Where such a provision exists, it is advisable that there should be a right of appeal from the local authorities to the state commission, in order that a service advantageous to several communities may not be stopped by the refusal of any one community to grant the necessary consent.⁶⁰

The final decision as to whether the certificate of convenience and necessity shall be granted must rest in the judgment of the commission. No formula will enable the commission to translate automatically the various categories of evidence here reviewed into a decision with respect to the granting or refusal of the certificate.

TRANSFER OF CERTIFICATES. In most states the transfer of certificates of con-

⁵³ *Re Carlucci*, P.U.R. 1919F, 704 (N.Y., 1919).

⁵⁴ *Re Sullivan*, P.U.R. 1922C, 731 (Nev., 1922); *Re Krakenberger*, P.U.R. 1928C, 222 (Wash., 1927).

⁵⁵ *Re Portland Taxicab Co.*, P.U.R. 1923E, 772 (Me., 1923); *Re Sumner*, P.U.R. 1927D, 734 (Utah, 1927).

⁵⁶ *Pacific Gas & Electric Co. v. Great Western Power Co.*, P.U.R. 1922B, 495 (Cal., 1921).

⁵⁷ *Choate v. Commerce Commission*, 309 Ill. 248, 141 N.E. 12 (1923).

⁵⁸ *Re Scott*, P.U.R. 1924B, 208 (Penna., 1923); *Re Jossy*, P.U.R. 1924B, 420 (Wash., 1924);

Re Way, P.U.R. 1927D, 305 (N.Y., 1927).

⁵⁹ *Re Motor Transit Co.*, P.U.R. 1922D, 495 (Cal., 1922).

⁶⁰ *Re Eastern Greyhound Line*, P.U.R. 1933A, 89 (N.Y., 1932).

venience and necessity is strictly supervised by the regulatory authorities. The holder of a certificate of convenience and necessity usually has no absolute right to transfer that certificate.⁶¹ Indeed, in some jurisdictions it has been held that the certificate is a personal license and is not transferable.⁶² In most states, however, a certificate of convenience and necessity is transferable if the commission or other regulatory authority is able to make the findings required by the statutes; but without the consent of the commission an attempt to transfer a certificate of convenience and necessity is illegal and void.

Certain differences of opinion exist with respect to the matters to be considered in determining whether or not a transfer of a certificate of convenience and necessity should be approved. Clearly the commission should call for evidence that the transfer will not be inconsistent with that public interest that is basic to the operation of a utility service.⁶³ But most commissions have taken the position that an application for approval of a transfer does not raise questions with respect to the public convenience and necessity of the service itself which were basic to the original grant.⁶⁴ If the public interest is to be protected, the commission must satisfy itself with respect to the fitness and qualifications of the purchaser.⁶⁵ Another matter of concern should be the price at which the transfer takes place; since a utility has a right to a return only on its legitimate investment, the transfer of a certificate from one operator to another should not effect an increase in that investment.

The lease of a certificate of convenience and necessity raises questions similar to those that must be answered with respect to an outright transfer. Most commissions look with disfavor upon a lease, permitting it only under unusual circumstances.⁶⁶

4. SERVICE-AT-COST FRANCHISES

GENERAL. The service-at-cost franchise is an attempt to develop a rate control procedure that will provide automatic adjustments in rates and charges with changes in the costs of rendering service. The plan is designed not only to achieve a flexible rate policy but also to provide the utility with an incentive to achieve maximum efficiency. In general, the service-at-cost franchise operates with a sliding scale: with each unit reduction in the rates charged to the consumer, the utility is allowed to earn an enlarged percentage rate of

⁶¹ *Re Calhoun*, 51 Wyo. 448, 68 P. (2d) 591 (1937).

⁶² *Westhoven v. Comm.*, 112 Ohio St. 411, 147 N.E. 759 (1925); *Estabrook v. Comm.*, 112 Ohio St. 417, 147 N.E. 761 (1925).

⁶³ *Re Calhoun*, 51 Wyo. 448, 68 P. (2d) 591 (1937); *Re So. Cal. Freight Line*, 30 P.U.R. (N.S.) 514 (Cal., 1939). See also *Re Greer*, P.U.R. 1922C, 131 (Cal., 1921); *Re Blubon*, P.U.R. 1923C, 1 (Cal., 1922).

⁶⁴ *Re Satero*, P.U.R. 1926D, 296 (Colo., 1926); *Re Colorado Motor Way*, P.U.R. 1927B, 569 (Colo., 1926); *Re Kidd*, P.U.R. 1928A, 771 (Colo., 1927); *Re Anderson Bus Corp.*, P.U.R. 1926B, 830 (Ind., 1925); *Re Rideout*, 41 Cal. R.C.R. 81 (Cal., 1938); *University City Transfer Co. v. Railroad Comm.*, 124 Fla. 308, 168 So. 413 (1936).

⁶⁵ *Re Pioneer Stages System*, P.U.R. 1929C, 136 (Mo., 1929); *Re Miller*, 25 P.U.R. (N.S.) 437 (Colo., 1938).

⁶⁶ *Re Pacific Greyhound Lines*, P.U.R. 1933C, 166 (Cal., 1933); *Re Fabia*, 12 P.U.R. (N.S.) 55 (N.Y., 1935).

return; and for each increase in the price of service, the allowable rate of return to the company is reduced.

The service-at-cost franchise places utility rates on a contractual basis. Though the commission should still retain certain responsibilities with respect to utilities operating under a service-at-cost franchise, it may be said that such an arrangement is one alternative to the control of utility rates by the state commission.

The history of the service-at-cost franchise, or the sliding-scale arrangement of regulating utility rates, begins in England in the latter half of the nineteenth century. In that country extensive experience with the sliding-scale plan has accumulated with respect to both gas and electric companies.⁶⁷ In this country the sliding-scale plan has been applied to gas, electric, and street railway companies, with the latter category of service supplying the greater number of instances. The sliding-scale program provides a rather more rigorous scheme of control than that under ordinary commission regulation; it is, therefore, not surprising that utility companies, as long as they are prosperous, have generally preferred to continue under the more conventional forms of rate control. The more straitened financial circumstances in which the street railway companies have found themselves is perhaps the explanation of the relatively large number of franchises of this character that they have placed in effect. Most of our experience with the sliding scale arose out of the financial difficulties encountered during the period of rising prices that accompanied and followed the World War. The inability of the utilities to get increased rates promptly resulted in some impairment in their credit; and those increases in rates which were granted led to widespread criticism and opposition on the part of the consuming public. Faced with these difficulties, financial and psychological, a number of companies were willing to accept the service-at-cost principle.⁶⁸ The most conspicuous example of the sliding scale in this country has been the so-called "Washington Plan" under which the Potomac Electric Power Company has operated since 1924.⁶⁹

There is no single standard pattern for the sliding-scale plan. The plans adopted in this country have varied all the way from a very simple agreement with respect to the sharing of the company's surplus profits to very elaborate schemes for establishing the company's dividend and depreciation policies. The agreement under which the Houston (Texas) Lighting and Power Company operated from 1915 to 1934 provided simply that the company might earn 8 per cent on its invested capital plus 4 per cent for deprecia-

⁶⁷ Bussing, *Public Utility Regulation and the So-called Sliding Scale*.

⁶⁸ On this side of the Atlantic a partial chronology of service-at-cost programs would include: Toronto, Canada, 1887; Boston, Mass., 1906 (gas); Cleveland, Ohio, 1910; Houston, Texas, 1915; Connersville, Ind., 1917; Dallas, Texas, 1917; Westerville, Ohio, 1917; Boston, Mass., 1918 (Boston Elevated); Cincinnati, Ohio, 1918; Eastern Massachusetts, 1918 (Bay State Street Railway); Montreal, Canada, 1918; Philadelphia, Pa., 1918; Youngstown, Ohio, 1919; Memphis, Tenn., 1920; Rochester, N.Y., 1920; Des Moines, Iowa, 1921; Findlay, Ohio, 1921; Pittsburgh, Pa., 1921; Toledo, Ohio, 1921; Louisville, Ky., 1921; Fresno, Cal., 1922; Grand Rapids, Mich., 1922; and Washington, D.C., 1924.

⁶⁹ *Re The Potomac Electric Power Co.*, 4 Ann. Rep. N.Y. Power Authority 81, 89 (1934). See also Bussing, *op. cit.*, Chapters VIII and IX.

tion, and that any additional earnings should be divided equally between the company and the community.⁷⁰

Since 1897 the Consumers Gas Company of Toronto, Canada, has operated under a sliding-scale agreement which is notable for its simplicity. The operation of the plan began with a reserve fund of \$1,000,000 established from the premiums paid on the sale of its capital stock. This fund is available only for the payment of salaries, dividends at the rate of 10 per cent per year, and specified appropriations for the renewal fund, whenever the company's earnings are insufficient to cover these items. Should the fund fall below \$1,000,000, the company is authorized to increase the price of gas. Decreases in rates are governed by a special surplus account. All surplus profits after specified appropriations to the reserve fund, the plant and buildings fund, and the 10 per cent dividend on the capital stock, are credited to a special surplus account. Whenever the surplus may amount to five cents per thousand cubic feet on the quantity of gas sold during the preceding year, the company is required to reduce its price for gas at least five cents per thousand cubic feet to all consumers.⁷¹ It will be noted that the Toronto scheme avoids all the complications that arise with respect to the determination of the rate base and the appropriate rate of return.

The Boston sliding scale, adopted in 1906, provided that the standard or basic price for gas should be ninety cents per thousand cubic feet and that the standard dividend rate should be 7 per cent on the par value of its common stock; in any year when the company's maximum net price per thousand cubic feet was less than the standard price, the company might declare and pay dividends exceeding the standard dividend rate in the ratio of $\frac{1}{5}$ of 1 per cent for every one-cent reduction in the maximum net price below the designated standard price.⁷²

The Washington plan has three elements: (1) On the basic valuation of the property the company was originally entitled to a return of $7\frac{1}{2}$ per cent; (2) the appropriations to the depreciation reserve were designed to produce a reserve not in excess of 20 per cent of the value of the property, the amount of the annual appropriation for the depreciation reserve varying with the size of the reserve; and (3) whenever the company's earnings should exceed $7\frac{1}{2}$ per cent on the rate base as defined, the company was required to reduce its rates in the following year by an amount calculated to absorb one-half of such excess earnings; and on the other hand, an average return of less than $7\frac{1}{2}$ per cent for five years, or less than 7 per cent for three years, or less than $6\frac{1}{2}$ per cent for one year, required the commission to increase rates so as to afford the $7\frac{1}{2}$ per cent return.⁷³ The earnings of the company under this plan averaged approximately 10 per cent during the years between 1925 and 1930, and in 1931 the commission modified the plan to provide for a basic return of 7 per cent on the rate base.⁷⁴

PROVISIONS OF SERVICE-AT-COST AGREEMENTS. *The rate base.* The first step in

⁷⁰ Bussing, *op. cit.*, p. 95.

⁷¹ Bussing, *op. cit.*, p. 64.

⁷² 22 *Ann. Rep. Bd. of Gas & Electric Light Comrs.* (1906), Appendix C, p. clxxvii.

⁷³ Bussing, *op. cit.*, pp. 119-121.

⁷⁴ *Re Potomac Electric Power Co.*, P.U.R. 1931E, 446 (D.C., 1931).

the establishment of a service-at-cost agreement is usually a determination of the rate base upon which the utility is entitled to earn a return. This rate base may be established by an inventory of the utility's property and a valuation of its assets according to the methods described in Chapters XI to XIV, or the rate base may be calculated from the company's books on the cost of its property or on its investment. However the initial rate base is determined, the rate base thereafter will be kept current through accounting adjustment. Additional investments will increase the rate base and the retirement of property will correspondingly decrease the rate base.

It is, of course, possible to avoid the problem of the rate base altogether by basing the utility's right to earnings upon the outstanding securities. Reference has already been made to the very simple plan which has operated in Toronto. This arrangement, however, is advisable only where the capitalization of the utility has been under the continuing supervision of a public service commission.

The rate of return. Different service-at-cost franchises have shown quite wide variations in the definition of the basic fair rate of return. Since it is the purpose of the plan to provide an incentive to increases in efficiency, and since any reduction in costs and rates allows the company to enjoy a higher rate of return, the basic rate of return should be established at that minimum which is just sufficient to attract capital to the company. If the plan operates according to expectations, any economies realized will be shared by the consumer and the company. If the initial rate of return is established at too high a level, the incentive feature will be less compelling and the plan will probably be the object of much unfavorable criticism by consumers. Since the typical service-at-cost plan makes no distinction between efficiency profits and those which arise from such circumstances as an increase in consumption, a reduction in the price level, or savings in cost due to technological changes beyond the scope of the management of the particular utility, and since all of these increased profits are available to the company, it is not altogether inappropriate that the initial rate of return should be established at a relatively modest level.

Expenses. The whole service-at-cost program may break down, unless the regulatory authorities are able to supervise the expenses which the company claims. It is possible to stipulate the permissible expenses only within rough limits; and hence continuity of supervision is required. This control may take the form of passing upon the reasonableness of the expenditures after they have been incurred. Or the utility may be required to submit a budget of its prospective expenditures, and to secure the approval of the regulatory authority before it may proceed to incur these expenses.

The critical items with respect to the regulation of utility operating expenses involve officers' salaries, appropriations to depreciation expense, and payments made to affiliated companies or to a holding company.⁷⁵ In the Washington plan the problems associated with depreciation were met by establishing a sliding scale of depreciation rates varying according to the amount of the reserve which the company had accumulated. It was provided that the reserve should not accumulate in excess of 20 per cent of the rate base.

⁷⁵ See Chapter XVIII.

Where the depreciation reserve fell below 15 per cent of the rate base, the annual credit to depreciation was set at 2.3 per cent of the rate base; the accrual rate diminished to 1.3 per cent of the rate base when the depreciation reserve should be 19, but less than 20 per cent of the rate base.⁷⁶ Probably the matter of depreciation accruals can be cared for most satisfactorily, in the ordinary case, by providing for the accrual of the reserve on the straight-line or on the sinking-fund method with provision for a revision of the rates by the commission on the basis of periodic reviews of the company's experience under the existing accrual rates.

The fundamental assumption upon which the service-at-cost plan rests is that by relating the rate of return to reductions in the charges to consumers it is possible to persuade the management to identify their interests with the interests of the consumers in lower rates. This basic assumption has proved fallacious in certain instances where the company has been controlled by a holding company. A holding company may find it to its advantage to accept the basic rate of return without striving to obtain a bonus return through reductions in rate and may seek to realize its profits through charges made to the operating company for services and materials furnished to it, especially as these charges to operating expenses are presumably recognized in calculating the rates under the plan. The abandonment of the service-at-cost arrangement with respect to the Boston Consolidated Gas Company in 1926 is credited in part to the fact that this company was controlled by a holding company which preferred to take its profits in the form of earnings realized on intercompany transactions.⁷⁷ With the development of more effective control over the holding company, it is possible that the service-at-cost franchise might operate satisfactorily even in such a situation.

Barometer funds. A desirable feature of any service-at-cost agreement is a provision for a special reserve or "barometer fund" to which the excess earnings of the company are credited. The accumulation of the fund to a designated total would be the signal for an automatic reduction in the rates, and should the fund fall to a designated percentage of the rate base or the utility's annual budget, there would be an automatic increase in rates. The inclusion of a provision for a barometer fund would avoid the necessity of frequent small changes in rates to adjust to variations in costs. By providing additional assurance that the utility would be able to pay the expected return on its outstanding securities, the cost of capital would presumably be reduced in proportion to the diminution in risk.

Supervision and regulation. The adoption of a service-at-cost program for the control of rates should not be looked upon as suspending all supervision and control on the part of the regulatory authorities. Such supervision and control should be continued by the state public service commission, or it may be entrusted to a special board of supervisors set up by the franchise. It should be the responsibility of the regulatory authority to undertake at least annually a review of the experience of the company under the contract. Such a body might review an annual budget if the company were required to submit it. The commission might also consider whether changing conditions with re-

⁷⁶ P.U.R. 1931E, 446, 448 (D.C., 1931).

⁷⁷ Bussing, *op. cit.*, pp. 84-86.

spect to cost made it necessary to adopt a new base price. Or a change in the conditions of the investment might require a consideration of whether the basic rate of return would suffice to preserve the credit of the company. It is likewise necessary that somewhere there reside responsibility for determining whether or not the company is fulfilling its obligations with respect to the quality of the service which it is rendering. And finally, it is necessary for the supervising authority to undertake an annual audit of the company's investment in order to ascertain that the rate base has been accurately determined.

Revisions. Not all service-at-cost franchises have made adequate provision for the orderly review of the effects of operations and for revisions when such appear to be in the public interest. Experience with regulation has revealed many instances where revisions with respect to the standards of rate control have been necessary. An increase in the operating costs might require an upward revision in the scale of charges to consumers; but under the provisions of the ordinary sliding scale, an increase in the cost of service to the consumer would be accompanied by a reduction in the percentage rate of return which the company would be allowed to earn.⁷⁸ Where conditions beyond the control of the management have compelled an increase in rates, and where there follows in consequence an automatic reduction in the rate of return, the utility company may find its investment standing seriously impaired. Such an impairment in the credit of utility companies is, of course, contrary to the best interests of the consumer. Similarly, a change in the conditions of the investment market may render the basic rate of return insufficient to attract capital under the new conditions; or in the reverse situation the ability to raise capital on a more favorable market may make it unnecessary for the company to continue to pay the stipulated basic return in order to attract ample investment funds. In order that necessary adjustments in the service-at-cost scheme may be made without the necessity of securing the formal approval of the two parties to the contract, it is necessary that the service-at-cost agreement state explicitly the principles that should be determinative of the basic schedule of rates and of the basic rate of return, and that the adaptation of the rate schedule and rate of return to changing conditions should be the continuing responsibility of the public service commission or other regulatory body.

Amortization. Service-at-cost franchises have not made extensive use of amortization provisions for writing down the utility's investment and thereby decreasing the future rate base upon which consumers need provide a return. In those instances where amortization provisions have been included, they have generally been concerned with the writing off of intangible elements of value, such as franchise values and development costs (losses incurred in the early years of operation).

Provisions inappropriate to the service-at-cost franchise. The service-at-cost franchise brings home to consumers the direct relation between the costs imposed on the utility company and the rates paid. It is not, therefore, customary to find in a service-at-cost franchise provisions imposing onerous responsibil-

⁷⁸ It might almost be said that in the past most service-at-cost contracts have been made upon the assumption that the costs of operation would not increase and that they would probably decrease with the passage of time.

ities on the utility. Provisions calling for free service to the municipality, the paving of streets, or the assumption of other expenses not directly connected with the rendition of the utility's service, are usually absent. Similarly, the adoption of a service-at-cost agreement may end the imposition of special taxes on the public utility, although there is no reason why the utility company should not pay all of those taxes which would be imposed upon any corporation owning property and doing business in the community.⁷⁹

Municipal purchase. In the discussion of municipal franchises generally, it was noted that it was customary in some instances to include in the franchise contract, particularly if it should be an indeterminate franchise, a provision with respect to the terms on which a municipality might acquire title to the utility property. Every franchise should contain an explicit agreement concerning the terms upon which the appropriate public authorities may succeed to the ownership and operation of the enterprise, but there is certainly no more reason to include such provisions in a service-at-cost franchise than in any other franchise. To the extent that the service-at-cost agreement is successful in reducing rates to consumers, the pressure for public ownership or for the substitution of a new company is likely to be weakened.

ADVANTAGES. Numerous advantages are claimed for the service-at-cost franchise, for under favorable conditions it may operate with benefit both to the consumers and to the investors. (1) The sliding-scale arrangement provides for a flexible adjustment of the rates to changes in costs. (2) By reaching an explicit agreement with respect to the respective rights and privileges of the consumers and the company, the delays and costly litigations that commonly accompany the valuation and the determination of the rate base are avoided. The adjustment of utility rates becomes almost automatic, and where the service-at-cost agreement takes advantage of the barometer fund, the decision with respect to rate policy is limited to the ascertainment of the facts upon which rate changes must rest. (3) The service-at-cost arrangement provides a more positive incentive to increased efficiency and to reductions in cost than is provided by conventional commission regulation. (4) The consumers may have any service which they are willing to pay for. The negotiation of the service-at-cost agreement affords an opportunity to reach an explicit understanding with respect to the quality of the service. If the consumers demand a more costly service, the company is in a position to ask for higher rates. (5) The company has the assurance that it will be permitted to charge such rates as may be necessary to cover the cost of service, and that changes in cost will be accompanied by appropriate changes in the scale of charges. Though increases in rates to cover enlarged costs of operation may be accompanied by a reduction in the rate of return, the company may be confident that it will be able to cover costs (providing consumers are willing to purchase the service at the price), and that it will have a return with which to meet its fixed charges. (6) Where conditions are favorable, the inauguration of a service-at-cost franchise may lead to progressive rate reductions and to liberal earnings. Where the plan sets up a special reserve or barometer fund, the company has a further

⁷⁹ In this connection it may be noted that the provisions of the Houston contract described above are not in the best tradition of service-at-cost agreements.

incentive to experiment with rate reductions that may promote increased consumption.

WEAKNESSES. (1) One criticism of the service-at-cost franchise is theoretical: the incentive to efficiency should operate with respect to those individuals who are responsible for management and who by their efforts may influence the cost of the service; under the service-at-cost franchise, the rewards that follow increases in efficiency and reduction in rates are payable to the stockholders, although the stockholders are usually without any active voice in the management and without any direct influence on efficiency. If the purpose of the service-at-cost franchise is to promote increased efficiency, then it would be highly desirable to provide some direct reward for management. (2) The service-at-cost franchise may be criticized for its failure to distinguish between efficiency profits and those profits which arise from circumstances and factors beyond the management's control. The company should not be penalized for an increase in cost due to circumstances beyond its control, and, similarly, it should not be entitled to enlarged profits simply because external circumstances have produced a fall in costs. Similarly, managements can usually claim no credit for technical improvements developed by those not associated with the utility.⁸⁰ In a similar category would be those increases in sales and the large profits that arise from a growth of the community; while the presence of a progressive utility service is a factor favorable to the development of a community, it could scarcely be argued that the growth of the community is to be attributed in any very considerable measure to the efficiency of the utility. (3) In the past, service-at-cost franchises have failed to provide adequate supervision of operating expenses. It has generally been assumed that management's interests are identical with the interest of the consumer in keeping operating expenses at a minimum. The expansion of the holding company has proved that this assumption is erroneous, and certain service-at-cost programs have failed following the acquisition of a local company by a holding company. Supervision over the operating expenses of the utility can presumably best be accomplished through the submission of a budget for commission approval. (4) The service-at-cost franchise has often failed to make provision for changing operating costs due to factors beyond the control of the management. (5) The typical service-at-cost franchise fails to make adequate provision for changes in the cost of capital. Changing conditions of the investment market, or even the growth and maturity of the individual utility company, may alter its relation to the investment market. (6) Service-at-cost agreements have not given sufficient attention to the necessity of continuity of supervision and regulation with respect to the operation of the plan. All of these difficulties can be avoided if the franchise be properly drafted.

⁸⁰ Most of the technical advance in the electric industry, for example, should be credited to the manufacturers whose research efforts have made possible new services and reductions in the costs of old services.

CHAPTER VIII

ACCOUNTING AND ITS REGULATION.

I. THE IMPORTANCE OF ACCOUNTING CONTROL

EARLY NEGLECT AND PRESENT EXTENT OF REGULATION. The control of utility accounts is one of the cornerstones on which the contemporary scheme of regulation is built. All of the federal commissions and forty-two of the state commissions possess a substantial measure of control over the accounting practices of utility corporations.¹

OBJECTIVES OF ACCOUNTING. For the corporation, the most important function of accounting is to inform the management. The large modern corporation, with its many departments and subsidiaries, would be incapable of satisfactory management without the business records and reporting that assemble the pertinent information for those responsible for policy-making and administration. Reliable accounting records are also essential for investors. The accounting records serve not only to determine the various equities and interests in the enterprise, but also to guide present and prospective investors in their decisions to invest or to liquidate their holdings. The creditors of the corporation, the banks and commercial houses with which the business has dealings, depend upon the financial reports of the corporation in their decisions to extend or withdraw credit from the business.

Accounting data are also necessary for the administrative work of governmental departments. The requirements of the taxing authorities are obvious. The state corporation commissions, as well as the Securities and Exchange Commission, devote a large share of their attention to the accounts and reports of corporations subject to their jurisdictions. Thus all corporations of sufficient importance to offer their securities to the general investing public must maintain adequate and accurate accounting records. But in the case of the utility enterprises accounting and its regulation are matters of even greater import.

RELATION OF ACCOUNTING TO PUBLIC UTILITY REGULATION. Accounting control is indispensable to all phases of public utility regulation. In the regulation of rates, the first step is the analysis of income and expenditure; the investment and the requirements with respect to fixed charges must be determined; the proper allocation of joint expenditures raises difficult questions; at all steps in cost analysis and rate setting, the commission and the company are dependent largely on financial records. Similarly, in the supervision of security issues and capitalization, the commission's determinations with respect to the propriety of the issue, the amount of capital to be raised, the price at which the security shall be sold, and the reasonableness of the underwriting and selling costs, are all derived from accounting records. The problems presented by petitions to approve plans for stock acquisitions, mergers, and reorganizations,

¹ Utility Regulation Chart, Chapter VI, pp. 205-217. See also p. 187.

and by intercorporate relations, must be resolved largely on the basis of data supplied by the accountants.

2. GENERAL PRINCIPLES

The general principles which underlie all accounting practice have been largely developed by the accounting profession. But at every point where accounting records come in contact with the judicial or the administrative processes of the government, there have been established precedents which have been instrumental in reshaping accounting principles and practices. For all corporations subject to any considerable measure of governmental regulation, accounting practices have been further defined by the uniform accounting systems prescribed by governmental authority. What are the basic principles of good accounting that underlie these formal governmental requirements?

The keeping of accounts and the preparation of reports are not concerned solely with objective factual materials; judgment enters where business requirements and accounting conventions necessitate an adjustment of historical facts to present conditions. A typical judgment problem is the determination of the rates at which the cost of fixed assets is charged off to depreciation expense. In this and all similar instances, the assumptions on the basis of which judgments are reached should be explicitly stated so as to minimize the opportunities for misunderstanding. There is a real need for the development of an accounting equivalent of the "probable error" which statisticians attach to their determinations.

All accounting records are based upon the assumption that the business is a going concern. Assets are valued (and depreciated), and income and expenses are determined on the theory that the normal operations of the business will continue. In the utility field this assumption has been responsible for certain departures from good accounting practice, notoriously in the valuation of intangible assets, and sometimes fixed assets too, on the assumption that the existing earnings, even when excessive, will continue undiminished; and similar departures from sound accounting practice have been found in prospectuses prepared for mergers.

The fundamental accounting equation, $\text{Assets} = \text{Liabilities} + \text{Proprietorship}$, represents the major premise on the basis of which all accounting transactions are analyzed. Yet it is not the primary purpose of this analysis simply to assure an equivalence between the totals of the assets and the claims of creditors and owners against them; rather, the primary objective is to assure a proper allocation of the equities and interests of the different parties, creditors and owners, in the assets of the business. There must be no confusion of the priority of the claims of different creditors, and the creditors' claims must be clearly and explicitly set forth as superior to the claims of those who are owners in the enterprise. And since the creditors depend for their protection on the equity which the owners have in the business, there must be no ambiguity as to the amount and nature of those equities.

The proper allocation of income and expense to the appropriate period

is fundamental to sound accounting. The accounts for any period should reflect all of the income earned during that period; and the income of each period should be charged with all expenses attributable to the earning of that income, even though some of the expenses were incurred before the opening of the accounting period or after its close. This principle may be stated in terms of the preservation of clear distinctions between capital and income, between capital expenditure and operating expense, and between investment or capital increment and income.

Accuracy constitutes another guiding principle for accounting. The importance of accuracy, both in the analysis of individual transactions, and in the preparation of the composite statements of the financial position and results of the business, requires no demonstration. It is largely in the interests of accuracy and certainty that the convention prevails of recording all transactions at cost. And the standard for cost is the cash cost; hence, where assets are acquired for other than a cash consideration, it is necessary to express the consideration in its current cash equivalent.

The accounts and reports must contain no misrepresentations and, so far as possible, they must be free from all ambiguities that might be misleading. This necessitates a high degree of lucidity and clarity, full explanations of all questionable items, and explicit statement of the assumptions and methods that have been followed in deriving all figures.

The amount of information that should be presented is closely related to the avoidance of misleading implications in the presentation of accounting data. The appropriate amount of information depends on the purposes for which the accounting reports are being prepared and the persons to whom they will be presented. All of the facts disclosed must separately and jointly convey a true and correct impression to those who have occasion to examine the reports and accounts. All "material" information should be presented, and this requirement is satisfied only with the disclosure of all information which could alter the conclusions that might be drawn from the accounting statements.

Finally, the form and manner in which accounting data are presented merit mention. The organization of the material for presentation should aid in conveying clearly and correctly the true position of the business, and should show such detail as not to conceal significant and material facts in broad general categories. It requires that all items should be accurately labeled. It requires that the accepted terminologies be employed with their conventional meanings, and that any departures therefrom be duly noted and carefully explained.

3. COMMISSION REGULATION OF ACCOUNTS

THE NECESSITY OF REGULATION. The dependence of effective regulation upon commission control over utility accounting has been noted. It has been remarked that the regulation of rates, operating expenses, security issues and capitalization, mergers and reorganizations, and intercorporate relations all

depend upon factual data which must be derived from the accounting records of the utility corporations. Long experience with regulation has also demonstrated that corporations generally, and utilities specifically, cannot be relied upon to adhere to proper accounting standards in the absence of supervision by public authorities. A further reason for commission control of utility accounts is that much of the essential data would not be available in the absence of the affirmative requirements of the regulatory authorities. Much of the information which the commission requires may be of little or no significance to management, and would not be worth the cost of assembling and preserving, in the absence of legal compulsions. Finally, the importance of uniformity in accounting justifies governmental regulation. It enables the interpretation of accounts and reports without elaborate preliminary inquiry into the meaning and significance of the items constituting the report. The possession of uniformly prepared reports facilitates comparison of the operating and financial experience of different enterprises, making it possible to use other companies as a standard in judging the success of a particular company.

SCOPE AND CONTENT OF COMMISSION AUTHORITY. Commission control over the accounting practices of utility corporations did not develop concurrently with regulation of rates. It was not until the Hepburn Act of 1906 that the Interstate Commerce Commission obtained adequate regulatory powers with respect to railroad accounting. The regulation of accounts by state commission also dates for the most part from 1907.

Commission control over the accounts of regulated enterprises begins with the authority to require annual and special reports. To make this authority effective, the commission must have power to prescribe the manner in which reports shall be prepared and to require specific answers to any questions on which it requires information. Some statutes do not leave the content of such periodic reports to the discretion of the commission, but attempt to specify in detail the information to be furnished, usually reserving to the commission the right to require additional pertinent data.² It is interesting to note that the Public Utility Holding Company Act of 1935 provides that the Securities and Exchange Commission may require that such reports "shall be certified by an independent public accountant."³

A fundamental accounting control is the provision that the commission shall prescribe a uniform system of accounts. Referring again to the Public Utility Act of 1935, the companies are required to "make, keep, and preserve for such periods, such accounts, cost-accounting procedures, correspondence, memoranda, papers, books, and other records as the Commission deems neces-

² Thus the Interstate Commerce Act specifies that "such annual reports shall show in detail the amount of capital stock issued, the amounts paid therefor, and the manner of payment for the same; the dividends paid, the surplus fund, if any, and the number of stockholders; the funded and floating debts and the interest paid thereon; the cost and value of the carrier's property, franchises, and equipments; the number of employees and the salaries paid each class; the accidents to passengers, employees, and other persons, and the causes thereof; the amounts expended for improvements; the earnings and receipts from each branch of business and from all sources; the operating and other expenses; the balances of profit and loss; and a complete exhibit of the financial operations of the carrier each year, including an annual balance sheet." (Sec. 20 [1].)

³ Sec. 14.

sary or appropriate in the public interest.”⁴ The Commission is authorized to prescribe uniform systems of accounts and thereafter it is made unlawful for any person to keep any accounts other than those prescribed by the Commission or in any other manner than that approved by the Commission.⁵ A more recent statutory power provides that the commissions may determine the accounts in which particular outlays and receipts shall be entered and the amounts for such entries, and if any item is challenged, the burden of proof to justify that entry rests with the company.

If accounting regulations are to be effective, it is necessary that commissions engage in a certain amount of policing. It is therefore customary for the public utility statutes to provide that the commission and its authorized agents shall have free access to all books, accounts, and other records of the utility companies. The accessibility of corporate records is also essential for such special investigations as the commission may choose to conduct through its own staff.

JUDICIAL REVIEW OF ACCOUNTING ORDERS. In the federal courts, the accounting orders of commissions have been considered “legislative orders,” and not conclusive of any of the substantive rights of the utilities. In effect, so long as a commission acts fairly and reasonably within the grant of power constitutionally conferred by the legislature, the commission’s accounting orders will not be subject to judicial review. This position was cogently summarized by Mr. Justice Cardozo:

“ . . . This court is not at liberty to substitute its own discretion for that of administrative officers who have kept within the bounds of their administrative powers. To show that these have been exceeded in the field of action here involved, it is not enough that the prescribed system of accounts shall appear to be unwise or burdensome or inferior to another. Error or unwisdom is not equivalent to abuse. What has been ordered must appear to be ‘so entirely at odds with fundamental principles of correct accounting’ as to be the expression of a whim rather than an exercise of judgment.”⁶ And the Supreme Court is not easily persuaded that accounting orders are “so unreasonable and arbitrary as to constitute an abuse rather than an exercise of the powers”⁷ delegated to public service commissions.

THE LEGAL VALIDITY OF ACCOUNTING CONTROL. There is no specific constitutional authority for the regulation of the accounting practices of utility companies, but the courts have recognized that the power to regulate the rates carries with it the power to engage in such ancillary regulatory activities as may be necessary to make rate control effective. The efforts of the com-

⁴ Sec. 15.

⁵ While provisions that companies shall keep only those reports prescribed by the commissions have been commonplace, and are still thought advisable in order to assure that the official accounts shall contain full and accurate information on all matters pertaining to the business, the requirement has sometimes been modified where the company is subject to two or more regulatory authorities. Thus the Federal Power Act of 1935, while permitting the Federal Power Commission to prescribe the accounts and the forms in which such accounts shall be kept, also provides that no company shall be relieved from keeping any accounts that may be required by any state authority. (Sec. 301.)

⁶ *Am. Tel. & Tel. Co. v. U.S.*, 299 U.S. 232, 236-237 (1936).

⁷ *Kansas City So. Ry. Co. v. U.S.*, 231 U.S. 423, 444 (1913).

panies to challenge the accounting regulations of the commissions have, in general, met with little success.

The first case to reach the Supreme Court, a challenge to the Interstate Commerce Commission's jurisdiction over water carriers operating on the Great Lakes, found the Court taking a realistic view of the necessity for comprehensive accounting supervision over all aspects of the carriers' business. This was clearly expressed by Mr. Justice Day:

"... The object of requiring such accounts to be kept in a uniform way and to be open to the inspection of the Commission is not to enable it to regulate the affairs of the corporations not within its jurisdiction, but to be informed concerning the business methods of the corporation subject to the act that it may properly regulate such matters as are really within its jurisdiction."⁸

Commission regulation of accounting practices has been attacked as an unconstitutional delegation of legislative authority. This challenge to the accounting regulations of the Interstate Commerce Commission, though rejected in the *Goodrich Transit* case, was repeated in the *Kansas City Southern* case.⁹ The railroad objected particularly to the Commission's distinctions between operating accounts and property accounts, not only as an exercise of authority not conferred by Congress, but also as an unconstitutional interference with the internal affairs of the corporation. To this, Mr. Justice Pitney responded with a defense of the principle of uniform and prescribed accounts:

"... The very object of a system of accounts is to display the pertinent financial operations of the company, and throw light upon its present condition. If they are to truly do this, the form must correspond with the substance. In order that accounts may be standardized, it is necessary that the accounts of the several carriers shall be arranged under like headings or titles; and it is obviously essential that charges and credits shall be allocated under the proper headings—the same with one carrier as with another. . . . So far as such uniformity requirements control or tend to control the conduct of the carrier in its capacity as a public servant engaged in interstate commerce, they are within the authority constitutionally conferred by Congress upon the Commission. There is no direct interference with the internal affairs of the corporation; and if any such interference indirectly results, it is only such

⁸ *I.C.C. v. Goodrich Transit Co.*, 224 U.S. 194, 211 (1912).

Indeed, jurisdiction respecting accounting data has been held to extend to all of the activities of companies directly subject to commission control. In the *Wichita Gas* case, the right of the State Corporation Commission of Kansas to be informed respecting the cost to an interstate pipeline company of the natural gas sold to a local distributing utility was recognized to the extent of upholding an order directing the local utility to cease recording as an expense more than 30 cents per thousand cubic feet. (290 U.S. 561 [1934].)

⁹ *Kansas City So. Ry. Co. v. U.S.*, 231 U.S. 423 (1913).

The Kansas City Southern Railway, in relocating its right of way, had made an expenditure of \$629,399.74. The Commission's order permitted a net addition to its capital accounts of only \$234,747.74, requiring that \$386,484 be written out of the capital accounts for properties contemporaneously abandoned. The railroad, having issued bonds to pay for the improvement, wished to charge the entire expenditure to capital account; and if it had spent the same amount in the improvement of the existing right of way, the accounting rules of the Commission would have permitted the entire sum to appear as a capital addition.

as is incidental to the lawful control of the carrier by the Federal authority and to this the rights of stockholders and bondholders alike are necessarily subject."¹⁰

The plea that accounting regulations have effected a deprivation of property has met with scant success. Referring again to the *Kansas City Southern* case, the railroad argued that compliance with the Commission's accounting order would deprive the preferred stockholders of a considerable part of their non-cumulative dividends, since the net earnings would appear smaller than under the company's proposed treatment of the entire expenditure as a charge to capital accounts. The Court, however, assumed "that the improvements are necessary to the general welfare of the company, and will result in its increased prosperity, and therefore make better the assurance of dividends for the preferred stockholders in the future." And it further added that if the carrier, "as a servant of the public," were not unwarrantedly injured or deprived of its property, the accounting regulations could "not be restrained on the ground of agreements made by the stockholders amongst themselves for apportioning profits."¹¹ As a matter of fact, it is extremely difficult to establish any deprivation of property as a result of an accounting order under the principles of judicial review followed by the Supreme Court, for it has been consistently held that accounting orders are not conclusive of the rights of the utility with respect to rate, or other substantive, regulations.¹²

In some instances it has been argued, either explicitly or implicitly, that the utility has a legal right to adopt fair and reasonable methods of accounting. The official answer to this contention has been that the utility has "no right to a particular form of accounting as such."¹³ In substance this complaint was presented in the *American Telephone and Telegraph Company* case. The Federal Communications Commission, in adopting a new system of accounts for telephone companies, required that "Telephone Plant in Service" be carried at "original cost," and defined "original cost" as "the actual money cost of (or the current money value of any consideration other than money exchanged for) property at the time when it was first dedicated to the public use, whether by the accounting company or by a predecessor public utility." The company wanted to show as the original cost the investment cost to the accounting company itself, arguing that the accounting regulations would prevent the companies from earning a fair return and from recovering depreciation expense on the investment cost if the property had a lower cost to a predecessor company. However, the Court found ample justification for such an accounting rule in the intercorporate relations that prevailed in the industry.¹⁴

From the federal cases, it may be concluded that the authority of the federal commissions to prescribe the specific entries for particular transactions, both the accounts in which the transactions shall be entered and the amounts that shall be recorded, is firmly established. When related questions were presented to the New York Court of Appeals, the authority of the state commission fared

¹⁰ *Ibid.*, 440-441.

¹¹ *Ibid.*, 453.

¹² *Norfolk & Western Ry. v. U.S.*, 287 U.S. 134, 141-142 (1932).

¹³ *Ibid.*, 143.

¹⁴ *Am. Tel. & Tel. Co. v. U.S.*, 299 U.S. 232, 239 (1936).

badly. The *Iroquois Gas Corporation* case arose from an appeal to be relieved of a condition which the Public Service Commission had attached to an order permitting the purchase of a natural-gas plant. The purchase price was more than either the depreciated book cost or the reproduction cost less depreciation, and the Commission imposed the proviso that the acquisition might be effected if the company would charge \$40,000 of the purchase price to surplus, reducing by the same sum its charge to plant investment. The Court of Appeals set aside the condition imposed by the Commission as an unconstitutional invasion of the company's rights, and permitted the acquisition to become effective without the condition.¹⁵

In *New York Edison Company v. Maltbie*, the Public Service Commission suffered an even more serious curtailment of its accounting controls at the hands of the New York courts.¹⁶ The litigation involved the protest of many New York utilities against the new system of accounts promulgated by the Commission. After ruling that the instructions in the accounting system were "more than general administrative or legislative rules," and hence subject to judicial review, the Court of Appeals affirmed the lower court's decision which held some of the critical features of the uniform system of accounts invalid under both federal and state constitutions. These invalid orders were concerned with the accounting for fixed property on an original-cost basis, the writing off of any difference between original cost and the cost, or book, value to the accounting corporation, the provision for depreciation on the "straight-line" basis, and the writing off of regulation expense and capital stock expense.

4. THE UNIFORM SYSTEM OF ACCOUNTS

THE DEVELOPMENT OF UNIFORM SYSTEMS. Although accounting controls go back to the beginnings of state regulation of utilities,¹⁷ the real development in the use of uniform accounting systems has come largely since 1907. By 1940, all but ten of the states had imposed uniform systems on the utilities operating within their jurisdictions.¹⁸

Responsibility for the promulgation of uniform accounting systems rests with the commission of each state. The work has been provided with leadership by the accounting regulations of the federal commissions, originally the Interstate Commerce Commission, and more recently the Federal Power Commission and the Federal Communications Commission. The association of utility companies, such as the former National Electric Light Association and its successor, the Edison Electric Institute, and the American Gas Association, have naturally been much concerned with the problem. The professional

¹⁵ *Iroquois Gas Corp. v. Comm.*, 264 N.Y. 17, 21, 2 P.U.R. (N.S.) 448, 451 (1934).

¹⁶ 9 P.U.R. (N.S.) 155-163; 281 N.Y. Supp. 223-232 (1935); 15 P.U.R. (N.S.) 143-147; 271 N.Y. 103-112 (1936).

¹⁷ The Massachusetts Board of Railroad Commissioners was directed to prescribe a uniform system of accounts as early as 1876 (*Acts of 1876*, c. 185), and the Board of Gas and Electric Light Commissioners was given similar power with respect to gas and electric companies in 1886 and 1887, respectively (*Acts of 1886*, c. 346; 1887, c. 382).

¹⁸ Chapter VI.

associations of accountants and engineers, and especially the National Association of Railway and Utilities Commissioners, have been active in the promotion of uniformity in the accounting systems adopted by state commissions.

GENERAL CHARACTERISTICS. The uniform system of accounts is prescribed by the commission in order that it may have assurance of the sufficiency and accuracy of the accounting records of the companies subject to regulation. It is customary for commissions to classify the companies according to the type of activity in which they are engaged and according to size, and to prescribe a system of accounts for each category and class of utility. The refinements and details which are economical and desirable for an accounting system depend somewhat on the size of the company; the larger companies may be required to adhere to more elaborate systems, while the smaller companies are spared this expense and permitted to employ simpler methods. In its accounting regulations, the Federal Power Commission recognizes four classes of electric utilities: Class A, those having operating revenues of \$750,000 or more, or an investment (original cost of electric plant) of \$4,000,000 or more; Class B, operating revenues of more than \$250,000 but less than \$750,000, and an investment of less than \$4,000,000; Class C, operating revenues of more than \$100,000 but less than \$250,000; and Class D, operating revenues of more than \$25,000 but less than \$100,000.

The uniform accounting system lists and describes the accounts in terms of which all transactions are to be recorded, and supplies general instructions, both in the form of general principles and detailed requirements for the treatment of accounting problems. Where the general rules do not apply, it is customary to require the approval of the commission before the matter is finally closed.

The objectives of the uniform system are not limited to securing accuracy; indeed, in the absence of active supervision, the uniform system is no assurance that accuracy will be attained. The advantages of the uniform classification in facilitating comparison between different companies has already been noted. But fundamentally, the uniform system affords the commission an opportunity to determine in advance the types of information which shall be available, and if thereafter accounting systems fail to provide the essential data, the fault is with the regulatory authorities rather than the companies.

The preparation of the uniform system of accounts is primarily the responsibility of the commission, but it is usually carried out in consultation with representatives of the industry. The commission is primarily concerned with the type and extent of the information which it believes requisite and the most effective ways of acquiring these data; the company representatives consider the cost aspects of the system and its usefulness in furnishing the data which management wants, both to guide its own decisions and to publish as formal statements for investors. When the system is finally adopted, it is promulgated as a commission order and the companies are required to give effect to the new system.

A uniform system of accounts consists of four elements: definitions, general instructions, the balance sheet accounts, and the income and expense accounts.

DEFINITIONS. The definitions are primarily concerned with the avoidance

of confusion and misunderstanding, but in a few instances the definition is significant in determining questions of policy, and hence may become a source of dispute between the commission and the utilities. In recent years, such differences of opinion have involved the definitions of "depreciation" and "original cost."

GENERAL INSTRUCTIONS. The general instructions are a vital part of the prescribed accounting system. It is, of course, a basic rule that all charges to either capital or operating accounts shall be just and reasonable. It is the duty of the utility so to keep its accounts as to be able to furnish readily full information as to any entry appearing on its books. Since the larger organizations may want more detailed information than is required by the commission with respect to particular classes of property, it is customary to permit the company to subdivide any account provided there is no impairment of the integrity of the prescribed accounts. The companies are instructed to submit all doubtful items for the consideration and decision of the commission. Finally, no utility may destroy any books or records without the permission of the commission.

In general, the accounting period adopted is the calendar year, but with increasing frequency companies are instructed to keep their books on a monthly basis.

With the growth in complexity of corporate organization and the increasing number of companies operating two or more plants, it has become necessary to provide refinements and safeguards. Thus, it is advisable to require the utility to keep quite detailed information with respect to all transactions with affiliated interests, and to assemble such information in appropriate clearing accounts. Likewise, where the company operates more than a single plant, its income and expense accounts, as well as its property accounts, should show the operations of each plant separately. And even more important for these companies engaging in two or more utility services, or in ancillary activities, is the careful segregation of each branch of the business.

THE BALANCE-SHEET ACCOUNTS. The section of the prescribed system dealing with the balance-sheet accounts consists of general instructions, a listing of the account titles, and detailed descriptions and instructions with respect to each title. In the case of the plant accounts and the earned surplus accounts, it is customary to provide for additional detail.

The purpose of the balance sheet is to disclose the financial condition of the utility as of a given date by showing its assets and other debits, and its liabilities, reserves, and proprietorship items. It is not enough that each item be recorded; the purpose of the statement is to present a logical and significant classification. The broad outlines of the balance sheet adopted by the Federal Power Commission for electric utilities exhibits the classification on page 252.

It is the ultimate purpose of accounting control to make rate regulation more efficient and effective. Thus accounting data are increasingly in demand to supply more exact information as to the costs of particular classes of service. In so far as possible, therefore, the accounts, both capital and income, should be so organized as to facilitate cost-finding inquiries by management and regulatory authorities.

BALANCE SHEET ACCOUNTS

(As prescribed by the Federal Power Commission)¹⁹

ASSETS AND OTHER DEBITS	LIABILITIES AND OTHER CREDITS
<i>Utility Plant</i>	<i>Capital Stock</i>
100. Electric Plant. 107. Electric Plant Adjustments. 108. Other Utility Plant.	200. Common Capital Stock. 201. Preferred Capital Stock. 202. Stock Liability for Conversion. 203. Premiums and Assessments on Capital Stock. 204. Capital Stock Subscribed. 205. Installments Received on Capital Stock.
<i>Investment and Fund Accounts</i>	<i>Long-Term Debt</i>
110. Other Physical Property. 111. Investments in Associated Companies. 112. Other Investments. 113. Sinking Funds. 114. Miscellaneous Special Funds.	210. Bonds. 211. Receivers' Certificates. 212. Advances from Associated Companies. 213. Miscellaneous Long-Term Debt.
<i>Current and Accrued Assets</i>	<i>Current and Accrued Liabilities</i>
120. Cash. 121. Special Deposits. 122. Working Funds. 123. Temporary Cash Investments. 124. Notes Receivable. 125. Accounts Receivable. 126. Receivables from Associated Companies. 127. Subscriptions to Capital Stock. 128. Interest and Dividends Receivable. 129. Rents Receivable. 130. Accrued Utility Revenues. 131. Materials and Supplies. 132. Prepayments. 133. Other Current and Accrued Assets.	220. Notes Payable. 221. Notes Receivable Discounted. 222. Accounts Payable. 223. Payables to Associated Companies. 224. Dividends Declared. 225. Matured Long-Term Debt. 226. Matured Interest. 227. Customers' Deposits. 228. Taxes Accrued. 229. Interest Accrued. 230. Other Current and Accrued Liabilities.
<i>Deferred Debits</i>	<i>Deferred Credits</i>
140. Unamortized Debt Discount and Expense. 141. Extraordinary Property Losses. 142. Preliminary Survey and Investigation Charges. 143. Clearing Accounts. 144. Retirement Work in Process. 146. Other Deferred Debits.	240. Unamortized Premium on Debt. 241. Customers' Advances for Construction. 242. Other Deferred Credits.
<i>Capital Stock Discount and Expense</i>	<i>Reserves</i>
150. Discount on Capital Stock. 151. Capital Stock Expense.	250. Reserve for Depreciation of Electric Plant. 251. Reserve for Amortization of Limited-Term Electric Investments. 252. Reserve for Amortization of Electric Plant Acquisition Adjustments. 253. Reserve for Depreciation and Amortization of Other Property. 254. Reserve for Uncollectable Accounts. 255. Insurance Reserve. 256. Injuries and Damages Reserve. 257. Employees' Provident Reserve. 258. Other Reserves.
<i>Reacquired Securities</i>	<i>Contributions in Aid of Construction</i>
152. Reacquired Capital Stock. 153. Reacquired Long-Term Debt.	265. Contributions in Aid of Construction.
	<i>Surplus</i>
	270. Capital Surplus. 271. Earned Surplus.

¹⁹ Federal Power Commission, *Uniform System of Accounts Prescribed for Public Utilities and Licensees*, Jan. 1, 1937, pp. 16 and 17.

It is a characteristic of recently adopted uniform systems to require more detailed information with respect to the utility plant accounts. The summary electric-plant accounts adopted by the Federal Power Commission are:

100. Electric Plant.

- 100.1 Electric Plant in Service.
- 100.2 Electric Plant Leased to Others.
- 100.3 Construction Work in Progress.
- 100.4 Electric Plant Held for Future Use.
- 100.5 Electric Plant Acquisition Adjustments.
- 100.6 Electric Plant in Process of Reclassification.

107. Electric Plant Adjustments.

The purposes of this classification of plant accounts are apparent. Each utility is required to classify its plant in accordance with the accounts prescribed. The original cost of the plant which is used and useful in the public service is given as Electric Plant in Service, and this original cost is defined as the cost incurred by the person who first devoted the property to the utility service, not necessarily the cost of the present owner. Discrepancies between cost to the present owner and original cost are recorded in Account 100.5, Electric Plant Acquisition Adjustments; other write-ups over original cost are included in Account 107, Electric Plant Adjustments; and the balances in both accounts are to be disposed of as the Commission shall direct. In the case of acquisitions, the utility is instructed to obtain and preserve all existing records relating to the property. The components of construction costs are itemized in detail, and specific instructions provide for the treatment of all overhead costs. In the matter of buildings, for example, the Federal Power Commission provides for some thirty-eight separate items of cost.

The electric plant accounts are further classified into intangible plant, production plant (with separate classifications for steam, hydraulic, and internal-combustion production), transmission plant, distribution plant, and general plant.²⁰ Each account is further subdivided to the individual identifiable physical units of property.²¹

THE INCOME ACCOUNTS. The income accounts present an analysis and summary of the sources of revenue and the directions of expenditure. In the language of the "Uniform System," "they are designed to show the operating revenues and expenses, the other income, the income deductions, the net income, the miscellaneous reservations of net income, and the amount of income or loss remaining for transfer to earned surplus."²²

In accounting for income it is extremely important to distinguish between those receipts which are genuine income and those which constitute either a contribution to, or a return of, capital. It is equally important, if the accounts are to show income and expense accurately, that all items be allocated to the proper accounting period. The detail in which accounts are prepared will

²⁰ *Ibid.*, 54-55.

²¹ As illustrative of the detail involved, consider the simple account of Poles, Towers, and Fixtures (No. 354) which contains eighteen items (*Ibid.*, 73-74.)

²² *Ibid.*, 87. The Federal Power Commission's classification of income accounts is indicative of the nature of the information which the accounting system seeks. (*Ibid.*, 88.)

depend upon how significant it is to know precisely the income and expense attributable to each category of service. Since utility operations are carried on under conditions of joint costs (that is, many of the costs apply to all of the services rendered rather than to a single identifiable service), cost analysis will always necessitate some arbitrary allocations. To supply detailed information is more feasible for revenues, since each consumer is billed separately; but even here it is seldom practical to classify the consumer's bill according to the time when and the purposes for which the service is used. And on the cost side, only the most general allocations of expense appear in the accounting records.

The operating expense accounts fall into six groups. Production, transmission, and distribution expenses are further subdivided as operation, maintenance, and miscellaneous expenses. Other operating expenses include customers' accounting and collecting expenses, sales promotion expenses, and administrative and general expenses. The Federal Power Commission's enumeration of operating expense accounts includes provision for 185 named accounts, and it still falls short of providing that detail which would be ideally desirable for cost-finding purposes.

It is customary for uniform systems of accounts to make provision for clearing accounts. These accounts assemble in one place the information pertaining to particular expenses when the specific transactions are properly and necessarily recorded in several different accounts. Recent criticism of the relations between operating utilities and affiliated organizations has led to such a summary of all payments between associated companies. Laboratory expenses, shop expenses, merchandising expenses, and transportation expenses are other instances that may call for the introduction of such clearing accounts.

5. PROBLEMS IN ACCOUNTING CONTROL

ENFORCEMENT PROCEDURE. The inadequacy of commission budgets often prevents accounting control from extending beyond the prescribing of uniform systems of accounts and the receiving and filing annual reports. For even the more active commissions, the enforcement of the accounting regulations is confined to the analysis of the periodic reports which the companies file and to the study of such special reports as may occasionally be required. In the past, the annual reports of the companies have not contained such information as would make this procedure an effective instrument of control.

Accounting control should provide a most satisfactory procedure for the continuous and effective regulation of utility enterprises. Yet, if accounting controls are to be effective, there must be a systematic policing of the company's books. This policing cannot be accomplished simply through inquiries arising out of an examination of the reports submitted by the companies. It is essential that there be field examinations of the books and records of the companies, conducted on the same basis and with the same thoroughness that characterizes federal bank examinations. Under existing regulatory practice, field audits occur, if at all, as an incident in a rate investigation or as a part of the inspection of physical property that sometimes accompanies the ap-

proval of security issues. Here surely is a place where modest expenditures would do much to heighten the effectiveness of utility control.

DEPRECIATION. *The problem.* Wherever the problem of depreciation arises, whether in accounting, in the regulation of operating expenses, or in the determination of the rate base, it is a source of controversy. These difficulties are not unexpected with a matter as complex as depreciation, involving considerations of fact and of policy, and calling upon the disciplines of accounting, economics, engineering, and the law. The difficulties antedate the concern of regulation with the problem; they are grounded in the divergent and sometimes inconsistent practices of the utilities. Both the courts and the legislatures have been hesitant to adopt explicit principles; conflicting and ill-considered pronouncements by these branches of government have been matched by commission policies which have failed to meet all the issues involved.

The importance of sound depreciation policies and practices to both utilities and consumers requires no demonstration. Upon the soundness of their depreciation policies depends the ability of the utilities to maintain the integrity of their investments and to attract necessary capital in the future. For the consumer the importance of depreciation can be measured in his bill: according to the statistics assembled by the Federal Power Commission for electric utilities, approximately ten cents in every dollar that is paid for electric service is allocated to depreciation.²³ And of course, the consumer has a significant stake in safeguarding the adequacy of service and the availability of cheap capital funds.

Two fundamental problems of rate regulation center in depreciation. To what extent should the past depreciation, the so-called accrued depreciation, be deducted in arriving at the rate base for determining a utility's net earnings? What provision shall be made for current, or accruing, depreciation in making allowance for the operating expenses of the utility company? The answer to each of these questions can be simplified or complicated by the character of accounting for depreciation which the utility follows.

The nature of depreciation. Much confusion exists as to the nature of depreciation. To some extent this confusion arises out of misunderstandings as to the meaning of depreciation and the concepts associated with it; to some extent it is the result of irreconcilable conflicts of interest. The extreme opposition to the generally accepted and conservative view concerning depreciation and its treatment comes from those who deny the existence of depreciation in a well-maintained utility property and oppose all recognition of it either in accounting or in rate regulation.²⁴ So successful has this opposition been that some regulatory authorities have permitted the word "depreciation" to be exorcised from their vocabularies in favor of the vague and supposedly innocuous "retirement expense."

²³ *Statistics of Electric Utilities in the United States, 1937.*

²⁴ The railroads have been particularly strenuous in their opposition to the adoption of depreciation accounting by the Interstate Commerce Commission. The carriers insisted that the accounts should reflect only definitely ascertained facts and that depreciation accounting would introduce "assumed facts which are based upon speculation as to the future," and that the prospective service lives of equipment cannot be estimated with sufficient accuracy. (*Depreciation Charges of Telephone Companies and Steam Railroad Companies*, 177 I.C.C. 351, 382-383 [1931].)

In terms of the Federal Power Commission's classification of accounts, *depreciation* is "the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance." As defined, depreciation is applied to the fixed assets of the utility. But the theory also applies to current assets. Nearly all of the assets of a utility are subject to ultimate exhaustion and retirement. In the case of the coal pile, the asset may be used and replaced many times in the course of a single year. But the service life of most "fixed" assets is also limited, though it may extend over many accounting periods, and each such asset will ultimately have to be retired from service. The losses in service value, for example, in the one instance the burning of the coal and in the other the wearing out of the boiler, are both costs of operation and both could be called depreciation. Such differences as exist are the product of dividing the life of the business into accounting periods. The asset that is purchased and consumed within the accounting period is reported only in operating expenses; the asset whose useful service extends over more than a single accounting period is "depreciated." It is sometimes useful to employ the term *current depreciation* to identify that loss in service capacity, measured in terms of book cost, which is attributable to the operations of the current period, and *accrued depreciation* to describe the accumulated depreciation present in the property which is still on the books of the company. Accrued depreciation, measured on the basis of the cost of the property, is the difference between the original service value of the new unit of property and the service value which the unit still possesses (both on a cost basis).

To achieve clarity, the technical terms employed in discussing depreciation should be clearly understood. The cost of an asset to a utility is generally greater than the sum paid for it, for purchasing and installation costs must be included; the total cost of the unit in place and ready for service is its *book cost*. When an asset is ultimately retired from service it is not often devoid of all value; if no other market is available, it can be sold as junk; but the sum for which it is sold, its *gross salvage value*, is diminished by the costs of removal and perhaps reconditioning, leaving the utility to realize only the *salvage value* (or the net salvage value). The cost to the utility for the use of an asset is its *service value*, the difference between the book cost and the salvage value. And the period of time between the installation of the unit and its retirement for accounting purposes is its *service life*.²⁵ *Service capacity* is less capable of precise description: there is theoretically a certain quantum of service which a capital instrument is capable of rendering during its useful service life; this capacity may be a function of time (as hours, days, months, or years) or it may be a function of output. The service capacity of a lead

²⁵ These relations may be illustrated with a hypothetical unit of property which cost \$100 to purchase and \$10 to install; its book cost was therefore \$110. If it was installed at the beginning of 1930 and retired at the end of 1939, its service life was 10 years. If on retirement its gross salvage value as junk was \$20 and it cost \$10 to remove, the salvage value was only \$10. Thus the difference between the book cost of \$110 and the salvage value of \$10, or \$100, was its service value. *Depreciable value* is sometimes used as synonymous with service value.

pencil or a tallow candle is palpable and measurable; but the electric light or the vacuum tube, or any other instrument, has an equally real, if less measurable, service capacity, and if the service life of each is 2,000 hours, 1,000 hours of use will leave them depreciated by 50 per cent even though the quality of their performance be in no way impaired. The Interstate Commerce Commission has used the expression *condition per cent* to describe the service capacity still inherent in a capital instrument. Thus if a unit of property originally had a service capacity of 100 units and 20 have been exhausted, its condition per cent is 80.²⁶

Depreciation may arise from many causes. Some types of property commonly wear out in service, as is usual with vehicles, motors, and storage batteries. The service capacity of other assets is commonly terminated by exposure to the elements; such are railroad ties, pole lines, and structures generally. Depreciation resulting from these causes is sometimes called *physical* depreciation, for the physical capacity of the asset to render service is reduced or terminated. In the past the rapid growth of demand and technical advances have resulted in retirements which were due principally to *functional* depreciation; that is, it was no longer economical to continue using property which was still physically capable of rendering the service for which it was originally acquired. Functional depreciation may result from inadequacy, obsolescence, or a change in regulatory requirements. Depreciation from *inadequacy* arises when the growth in the scale of operations makes necessary the installation of units with greater capacity. Thus, an electric utility may find it advisable to install larger generators rather than add to the number of small generators; a water or a gas utility company may find it necessary to replace small mains with larger ones. *Obsolescence* is a function of technical progress, and arises when an existing unit is retired before it has exhausted its service capacity because an opportunity exists to substitute a unit so much more efficient that it is economical to absorb the cost of prematurely retiring existing equipment. Thus in the development of communication, new transmitters with higher fidelity replace older units, new cables capable of carrying many messages replace those with smaller capacity, and dial exchanges replace manual exchanges. Utilities are especially exposed to public demands for unremunerative improvements: telephone and power companies have had to place overhead wires in underground conduits, street railways have substituted busses for trolley cars, and railroads have purchased more luxurious passenger equipment. These expenditures are likely to take place without waiting for the existing equipment to reach the stage of retirement, and necessitate a rate of depreciation more rapid than was originally contemplated for the discarded equipment. Which of these factors is controlling in the retirements will depend upon the circumstances of the particular case; all may be operative with respect to different parts of the utility plant. In the past, the functional causes of depreciation have been dominant; some authorities have attributed as much as 80 per cent of utility retirements to functional depreciation.²⁷

Having considered some of the things which depreciation is and on which

²⁶ *Texas Midland R.*, 75 I.C.C. 1, 125 (1918).

²⁷ Nash, *Economics of Public Utilities*, p. 88.

it depends, there may be some gain in a brief consideration of some of the concepts which commonly introduce confusion into depreciation accounting. It is often urged that there is no depreciation in a plant which is capable of continuing its original service; so might the Deacon have argued about his masterpiece, the wonderful one-horse shay, that "ran for a hundred years to a day" and then "went to pieces all at once." Though the candle gives as much light as the last inch burns, it would be absurd to argue that it is undepreciated; and what is true of the candle is true of any unit of property whose service life is not without limit. The accruing of depreciation is not to be identified with any loss of efficiency in operation. Moreover, depreciation is no necessary function of the use to which the property has been placed; a completely idle capital instrument may depreciate from the mere passage of time or from exposure, and it is, of course, susceptible to depreciation from functional causes. Finally, depreciation is not proportional to earnings; an increase in gross earnings through an increase in the price of the service or product produced does not increase the amount of depreciation accruing in the physical property, nor can the amount of depreciation be diminished through a reduction in gross earnings attendant upon rate reductions. It is hardly necessary to add that depreciation, the inexorable march of the capital instrument to the scrap heap, is independent of the accounting devices which are used to reveal or conceal the facts of depreciation.

It should, however, be noted that there is a significant relation between depreciation and maintenance. A generous program of maintenance cannot halt the inevitable accumulation of depreciation, as some of the opponents of depreciation accounting have insisted; but failure to provide adequately for maintenance may result in a more rapid destruction of the potential service capacity of the capital.

The purpose of depreciation accounting. Much of the confusion respecting the legal status of depreciation accounting and its regulation by public authorities is attributable to erroneous conceptions as to the purposes of depreciation accounting. The matter can best be opened by noting briefly that certain objectives are *not* properly the goal of depreciation accounts.

(1) It is not the purpose of depreciation accounting to maintain the plant at a high level of efficiency. Efficiency in operations is an engineering matter and has little relation to depreciation accounts. Efficiency is more closely related to the adequacy of the maintenance policy, for a failure to maintain the property may result in unnecessary and costly interruptions for repairs or lead to premature retirement of capital equipment.

(2) It is not the purpose of depreciation accounting to accomplish the retirement or amortization of outstanding securities. If there are no better ways of employing the funds retained in the business through depreciation accounting, it may appear advisable to invest them in the company's own securities.²⁸

(3) It is not the purpose of depreciation accounting to provide a fund for the financing of capital improvements. Where a utility is expanding and re-

²⁸ It may be observed that some publicly owned projects prefer to substitute amortization of outstanding securities for a policy of accumulating depreciation funds. This procedure is not inconsistent with the purposes of depreciation accounting.

quires new capital funds, it is the part of wisdom to employ its depreciation funds in such financing. But the provision to be made for depreciation has no relation to the program of capital expansion.

(4) It is not the function of depreciation accounting to protect the credit of the utility or to enable it to raise new capital funds more advantageously, though these advantages are associated with adequate depreciation policy.

(5) Finally, it is not the purpose of depreciation accounting to maintain unimpaired the present value of the utility's property, or even to preserve the integrity of its investment. If the present value of the utility's property is thought to fluctuate with changes in the level of construction costs, there is no guarantee that the appropriations for depreciation can be so adjusted as to offset the fluctuations in the general level of prices.

Turning from negative to positive considerations, it is the purpose of depreciation accounting (1) to achieve a correct allocation of costs to the different accounting periods, and (2) to provide for the retirement costs of assets whose useful service lives have been exhausted.

(1) There is no possibility of providing a correct statement of the costs of operation and the net income for any accounting period if due recognition be not given to depreciation. The decline in service capacity of fixed assets, whether from wear and tear or from functional causes, is as much a cost of the services rendered in a particular period as the sums paid for fuel and labor. To postpone recognition of such costs until the service capacity of the equipment is exhausted, overstates the costs of the period when the equipment is retired and replaced, and overstates the net income for all of those periods when an insufficient allowance was made for the declining service capacity of the equipment in use. Not simply fairness as between consumers and investors, but also the avoidance of discrimination between consumers at different periods in the company's history requires provision for depreciation in each and every accounting period.

(2) That it is one of the purposes of depreciation accounting to provide for retirement costs, but not necessarily for replacement, requires explanation. When an asset is retired, it may not be replaced; or if it is replaced, the replacement may cost more, or less, than the unit which is retired. To make no provision for depreciation because the unit is not being replaced would result in an impairment in the utility's capital. Similarly, to measure the amount of depreciation by the replacement cost when that cost is less than the cost of the retired unit would result in a proportional impairment in invested capital. On the other hand, should depreciation be measured by replacement cost when the latter is above the cost of the retired unit, present consumers would be required to provide part of the capital funds for serving future consumers. The purpose of depreciation accounting, then, is not to provide a fund sufficient to finance the replacement of the unit of property being retired; its purpose is to recover the cost of that unit in current use which is facing ultimate retirement.

The theory of depreciation. It is the theory of depreciation that the company should reserve from earnings during the useful service life of each unit of capital equipment a sum sufficient to offset its cost of retirement (to write

down the asset account) when its use terminates. In principle, this cost of retirement is one of the costs of operation and should be recognized as an operating expense during each accounting period. The assets which depreciation accounting records as in use in the business should at any given moment be equivalent to the difference between the aggregate service capacity of all the existing capital when new and the diminution in service capacity recorded for all capital units in use. Finally, when any unit of property is retired from active service, its book cost should be deducted from the appropriate asset account and the difference between its book cost and salvage value should be deducted from the reserve for depreciation.

The depreciation accounts. The facts with respect to depreciation are to be found in the Depreciation Expense Account, in the Reserve for Depreciation, and in the fixed asset accounts. Depreciation is recorded by periodic charges (debits), probably monthly, to the Depreciation Expense Account, and by offsetting credits to the Reserve for Depreciation. The credit balance in the Reserve for Depreciation is the measure of the extent to which provision has been made, at any moment of time, for past or accrued depreciation. Utility corporations commonly carry the Reserve for Depreciation on the liability side of the balance sheet, although accountants prefer to show the reserve as a deduction on the asset side. If provision for depreciation has been accurately made, the total charges for depreciation expense (increased by the interest on the reserve if the sinking-fund method is employed) should, at the expiration of normal service life, be equivalent to the original cost of the property, plus costs of removal, less any salvage value.²⁹

Unit versus group depreciation. The provision for depreciation may be made on the basis of the individual unit or on the basis of a group of homogeneous, or nearly homogeneous, units. In the past, there has commonly been a single blanket allowance for depreciation with no detailed analysis of the requirements with respect to the different categories of property. The unit method of analysis is naturally followed in the case of structures such as buildings, bridges, dams, et cetera; while for ties, poles, wire, cables, transformers, and the like, the group procedure is appropriate. There are, of course, some classes of property, of which land is the conspicuous example, which are essentially nondepreciable.³⁰

The base for depreciation. The methods of accounting followed by utility organizations, especially in their measure of the losses occasioned by retirements, will not always bear critical inspection. One such method is the rule-of-thumb practice of appropriating 10 per cent of gross earnings for retirement expenses. Any increase in earnings, whether from an increase in rates or an increase in the volume of business, provides more fully for depreciation, and

²⁹ This is a generalized picture of "depreciation accounting." Those companies using retirement accounting would usually have accounts entitled Retirement Expense and Reserve for Retirements, and the amount and regularity of the provision for retirements would be determined by managerial discretion. The details of this and other accounting methods are discussed below.

³⁰ The heavy losses which some utilities, notably the railroads, have experienced in disposing of real-estate holdings no longer required for utility service, suggest that some provision for depreciation on land investments would not be inappropriate when the prospect of discontinuing the use of particular parcels of real estate arises.

any decrease in gross earnings has the opposite effect. Since depreciation is a function of the existence and use of physical property, the measure of depreciation cost should be the fixed capital itself rather than the revenue which that property yields.

Three bases related to the physical capital have received consideration as appropriate for the measurement of depreciation cost: the original cost, the replacement cost, and the present fair value of the depreciable property.

(1) The original-cost base. The original cost of depreciable property is the base which is approved by the weight of authority. (i) Original cost is the sound basis for measuring depreciation; it is in accord with the fundamental purpose of depreciation accounting, namely, to recover the costs of retirement rather than to provide for the costs of replacement. Other expenditures incurred by the utility in the service of the public are reimbursed on the basis of cost, and there is no reason why the expense of providing the physical capital should not be recovered on the same cost basis. (ii) The original-cost base is just and equitable for both investors and consumers. Consumers pay the cost of the service, including the cost of capital. To ask the consumers to pay more than cost, is to make them contribute to the capital of the enterprise. To charge the consumers less than the cost of the capital consumed is to deprive the investors of the return *of* their capital to which they are entitled even more surely than to a return *on* their capital. (iii) The original-cost base has marked advantages for accounting administration. It is simple and definite. The original cost of the asset is known; its replacement cost can be only a doubtful prediction;³¹ while its present fair value, even when determinate for the day, is uncertain as of the retirement date. The adoption of the original-cost base permits a scheduling of depreciation charges with reasonable certainty throughout the service life of the capital instrument. (iv) The original-cost base is the conventional measure supported by long-established business usage and by governmental regulations.³²

As a weakness of the original-cost base it is sometimes urged that, in a period of rising costs, the company must have a sufficiently enlarged depreciation allowance to permit the maintenance of the physical plant intact despite the higher level of replacement costs. On the contrary, it should be recognized that it is no function of the depreciation reserve to meet the hazard of rising prices.

(2) The replacement-cost base. Whenever rising costs are experienced there is a demand for the use of replacement costs in the calculation of depreciation allowances. The theory on which this base is urged assumes that depreciation should provide the means of financing the new property with which the old is replaced.

A consideration of replacement cost will reveal many and serious faults in its use as a base for the calculation of depreciation allowances. (i) A quite fundamental objection is the perversion of depreciation accounting from its

³¹ This is especially true where the asset is not replaced by an exactly equivalent unit, the usual situation where technical progress occurs.

³² Mr. Justice Brandeis has assembled the evidence on this point in his strong dissent in *United Ry. & E. Co. v. West*, 280 U.S. 234, 265-288 (1930).

primary purpose of recording as operating expense the costs resulting from the consumption of property in service. (ii) An equally serious objection is that, for many categories of property, replacement in kind is the exception rather than the rule. (iii) Theoretically, depreciation is unrelated to replacement. To argue the extreme case, depreciation certainly occurs whether or not the property is replaced, and it would certainly be imprudent of management and unfair of regulatory authorities to make no provision for depreciation simply because it was not proposed to replace the depreciating property.

Other difficulties arise if the possibility of fluctuating prices be considered. (iv) If prices are rising, the use of the replacement-cost base would compel consumers to provide additional capital for the utility, at least to the extent that replacement costs were above the cost of the depreciating equipment. Consumers would thus be in the position of involuntary investors, though with no right to a return on their investment; and what is even worse, they would thereafter be asked to provide a fair return and depreciation allowance on capital they had contributed. Obviously, consumers' obligations end when they have paid the cost of service, including the cost of the capital assets used and exhausted in rendering that service. (v) The assumption of falling prices illustrates the capacity of the replacement-cost base to injure investors. The injustice in this instance is similar to that when no replacement is made; consumers are paying less than the cost of their service; they are being subsidized at the expense of investors. (vi) Finally, the replacement-cost base for depreciation accounting is administratively impossible. The necessity of estimating the replacement cost would introduce new opportunities for errors in providing for depreciation. Every change in the prospective replacement cost would require a revision of the annual allowance for depreciation expense and a review of the present adequacy of the existing reserve. The annual depreciation allowances would be subject to fluctuations exceeding (in percentage terms) the variations in replacement cost, causing disturbing fluctuations in net earnings.

(3) The fair-value base. The use of fair value as the base for depreciation accounting has been urged by some. This method is advocated on the theory that the utility has a *right* to a reasonable return *on* the fair value of its property and also to a return *of* the fair value of that property. This method would probably never have been accorded serious consideration had it not received the support of the Supreme Court in *United Railways & Electric Company v. West*.³³

³³ Mr. Justice Sutherland spoke for the majority:

"The allowance for annual depreciation made by the Commission was based upon cost. The court of appeals held that this was erroneous and that it should have been based upon present value. The court's view of the matter was plainly right. One of the items of expense to be ascertained and deducted is the amount necessary to restore property worn out or impaired, so as continuously to maintain it as nearly as practicable at the same level of efficiency for the public service. The amount set aside periodically for this purpose is the so-called depreciation allowance. Manifestly this allowance cannot be limited by the original cost, because, if values have advanced, the allowance is not sufficient to maintain the level of efficiency. The utility 'is entitled to see that from earnings the value of the property invested is kept unimpaired, so that at the end of any given term of years the original investment remains as it was at the beginning.' *Knoxville v. Knoxville Water Co.*, 212 U.S. 1, 13-14. This naturally calls for expenditures equal to the cost of

Examination of the present-fair-value base will reveal that it is afflicted with all the infirmities that beset the replacement-cost base. It possesses one additional disadvantage in that the determination of present fair value involves even more conjecture than is required for the prediction of replacement cost, so that even greater errors are probable in the calculation of depreciation charges. The adoption of either of these methods of calculating depreciation would require radical changes in the accounting classifications in current use; either method is inconsistent with recording capital assets at cost in the accounts of utility companies.

Reserve methods of accounting for depreciation. There are two distinct schools of thought on the subject of depreciation accounting for utilities. One holds that utility corporations should accumulate depreciation reserves during the service life of the property sufficient to recover the total cost or service value. The other would provide for the replacement of the property (rather than its retirement) through charges to operating expenses at the time of replacement (or even through the accounting periods following replacement), and would accumulate reserves only to the extent necessary to care for marked inequalities in the annual charges for replacements.³⁴ Though there are many varieties of the reserve method, the essential characteristics of all can be explored through an examination of the three common applications of the method: the straight-line, the sinking-fund, and the annuity methods.

(1) *The straight-line method.* The straight-line method of accounting for depreciation is the simplest and, in the past, the most widely used. It can be understood best in terms of the assumptions upon which it rests. (i) It accepts current depreciation as an operating expense to be charged regularly against income. (ii) It recognizes that, although no cash outlay for retirements is required initially, cash equivalent to retirement costs will ultimately be necessary. (iii) It requires the prior determination, within workably accurate limits, of the service life and salvage value of all depreciable property. (iv) While it does not necessarily assume a uniform periodic loss of service value, it does assume that it is proper to provide for the loss of service value through uniform

the worn-out equipment at the time of replacement; and this, for all practical purposes means present value. It is the settled rule of this Court that the rate base is present value, and it would be wholly illogical to adopt a different rule for depreciation. As the Supreme Court of Michigan, in *Utilities Commission v. Telephone Co.*, 228 Mich. 658, 666, has aptly said: 'If the rate base is present fair value, then the depreciation base as to depreciable property is the same thing. There is no principle to sustain a holding that a utility may earn on the present fair value of its property devoted to public service, but that it must accept and the public must pay depreciation on book cost regardless of present fair value. We repeat, the purpose of permitting a depreciation charge is to compensate the utility for property consumed in service, and the duty of the commission, guided by experience in rate making is to spread this charge fairly over the years of the life of the property.' " (280 U.S. 234, 253-254 [1930].)

The Court was divided. In addition to Mr. Justice Sutherland, the majority was composed of Justices Van Devanter, McReynolds, Butler, and Sanford. Mr. Justice Brandeis wrote a vigorous dissenting opinion in which Mr. Justice Holmes joined. Mr. Justice Stone also dissented.

The preceding discussion of depreciation should serve to reveal the serious fallacies in Mr. Justice Sutherland's argument. See also the report of the Interstate Commerce Commission relative to *Depreciation Charges of Telephone Companies and Steam Railroad Companies*, 177 I.C.C. 351, 379 (1931).

³⁴ The latter procedure is discussed subsequently under the heading "Other Methods of Accounting for Depreciation." They are not usually classified as "Reserve Methods."

periodic (annual or monthly) charges to operating expenses and corresponding credits to the reserve for depreciation. (v) The straight-line method permits the earnings on assets retained through the operation of the depreciation reserve to accrue as income to the company.

The determination of the periodic charge for depreciation is quite simple. The service value of the depreciable property (that is, the cost less the salvage value), divided by the number of accounting periods, indicates the charge to depreciation expense. For example, if a unit costing \$1,000 and having no salvage value has a prospective service life of 10 years, the depreciation charge under the straight-line method would be \$100 per year.³⁵

The reserve for depreciation arises through periodic credits, with offsetting charges to depreciation expense. When property is retired, the book cost is subtracted from (credited to) the asset account for the property, the salvage

³⁵ The calculation of the periodic depreciation charge and the reserve according to the straight-line method may be indicated by the following formulae:

Adopting these symbols and definitions:

D = The charge for Depreciation Expense for the accounting period (one year or one month),

C = The Original Cost of the unit of depreciable property (including the costs of installation),

S = The Net Salvage Value,

n = The predicted Service Life of the unit (in accounting periods).

Then, the uniform charge for depreciation for each accounting period is

$$D = \frac{C - S}{n}$$

If

A = The accumulated credits to the Depreciation Reserve, and

k = The specific period (month or year) within the predicted Service Life of the unit.

Then,

$$A_k = k \left(\frac{C - S}{n} \right).$$

If

R = The Fair Return, and

i = The Fair Rate of Return,

Then,

$$R_k = [C - (k - 1) \left(\frac{C - S}{n} \right)] i.$$

If $E = D + R$,

Then,

$$E = [C - (k - 1) \left(\frac{C - S}{n} \right)] i + \frac{C - S}{n}.$$

The application of these formulae to the above example follows:

If a unit costing \$1,000 installed has no net salvage value and is expected to last 10 years, then $C = 1,000$, $S = 0$, $n = 10$; hence, the annual depreciation charge is

$$D = \frac{1000 - 0}{10} = \$100.$$

If the accumulated charges at the end of 5 years, A_5 , is sought, then

$$A_5 = 5 \left(\frac{1000 - 0}{10} \right) = \$500.$$

The fair return on the original investment in the fifth year, R_5 , assuming a fair rate of return, i , of 6 per cent is

$$R_5 = [1000 - (5 - 1) \left(\frac{1000 - 0}{10} \right)] .06 = (1000 - 400) .06 = \$36.00.$$

And the total of depreciation expense, D_5 , plus the fair return, R_5 , in the fifth year is E_5 .

$$E_5 = [1000 - (5 - 1) \left(\frac{1000 - 0}{10} \right)] .06 + \frac{1000 - 0}{10} = 36 + 100 = \$136.$$

value is added (debited) to cash or other asset account (as materials or equipment), and the difference between the book cost and the salvage value is deducted from (debited to) the reserve for depreciation. When a unit is retired before the end of its normal service life, it is customary to deduct the full retirement cost from the depreciation reserve even though full depreciation has not been accumulated on the particular unit.³⁶

The reserve for depreciation is largely the creation of the early years of a company's life. Unless a company continues to expand, the time comes when annual retirements are approximately equal to the annual charges for depreciation, and the reserve will thereafter tend to be stabilized. The reserve for a mature property approximates 50 per cent of the value of its depreciable property.

The assets which are retained in the business through the accumulation of the depreciation reserve are not normally held as idle funds. If the company is expanding, it is both customary and proper to invest such funds in additions to plant or working capital. When the depreciated property is retired and replaced, it may be necessary to finance the replacement through the issuance of additional securities; but if the company has previously built up the total of its assets, through the reinvestment of its depreciation funds, there will be ample assets to justify the enlarged capitalization. The earnings on property acquired through the investment of the depreciation funds are merged with the general income of the corporation.

The advantages of the straight-line method begin with its simplicity. The calculation of the depreciation charge is extremely simple, and the accounting work is free from complexities. When experience requires frequent revision of life estimates and depreciation provisions, the simplicity of the straight-line method is particularly apparent. The fundamental advantage, however, lies in the soundness of its assumptions: the recognition of depreciation as an expense, and the relatively liberal charges to operating expenses which permits a rapid accumulation of the reserve. The larger the reserve for depreciation, the greater the protection against losses associated with premature retirements resulting from functional depreciation.³⁷

The straight-line method has been criticized on several scores. (i) By those opposed to all reserve methods, the impossibility of absolutely accurate forecasts of either the service life or the salvage value of long-lived equipment is stressed. It is, or course, true that absolute accuracy in such forecasts may not be expected, but since some provision for depreciation is an essential of sound finance, the objection is not convincing. It is interesting to note that the utilities most susceptible to the onsets of functional depreciation, the telephone companies, have been in the forefront of those using and supporting the reserve methods of accounting for depreciation. (ii) It is also objected that the service capacity of equipment is not exhausted by equal annual sums. Again the criticism is strained, for the soundness of the straight-line, or any other

³⁶ In such a situation the depreciation allowance would presumably continue until full depreciation for that group of assets has been charged into operating expense.

³⁷ There should, of course, be assurance that liberal provisions for depreciation will not lead to inflation of the rate base.

reserve, method is not dependent upon a coincidence between the annual loss in service capacity and the annual increment to the reserve; it is only necessary that, applying the law of averages, there shall be a sufficient reserve to cover the costs of retirement when retirement becomes necessary.³⁸ (iii) The fixity of the annual appropriations for depreciation expense is a target for criticism on two scores: first, the earnings of the utility in the early developmental period may be inadequate to support large depreciation allowances and the attempt to make full provision may prevent the payment of dividends essential to the establishment of the company's credit; and secondly, it is possible that even after the utility has reached maturity the short-term earnings may be insufficient to permit both the depreciation allowance and the continuance of established dividends, and in this situation it is said that directors should be free to waive provision for depreciation in years of lean earnings. This double argument for flexibility in depreciation provisions assumes an extreme of foresight in management, the ability to discern whether the inadequacy of earnings is temporary and whether there will be an opportunity to make good a deficiency in depreciation accumulations before retirements draw upon the reserve. It is significant that the more conservative and responsible the management, the less likely is a decision to skimp depreciation provisions even in periods of inadequate earnings. (iv) The straight-line method is criticized by the advocates of sinking-fund accounting for its failure to make allowance for the earning power of the reserve. A later comparison will reveal that the costs to the consumer are the same under either the straight-line or the sinking-fund methods (assuming that the sinking fund is invested in the utility property), so that this objection is reduced to a question of accounting formality.

(2) *The sinking-fund method.* Several of the assumptions on which sinking-fund accounting for depreciation is based are identical with those of the straight-line procedure: that current depreciation is an operating cost; that no cash outlay is required immediately; that commensurate provision in cash will ultimately be required for the service value of the plant retired; and that it is possible to forecast with reasonable accuracy the service life and salvage value of depreciable property. The sinking-fund method differs from the straight-line in two respects: the annual allowances credited to the depreciation reserve are accumulated at compound interest throughout the service life of the property; hence the earnings on the assets represented by the depreciation reserve are credited to the reserve instead of being unappropriated income for the corporation. In substance, the sinking-fund method assumes that the owners are not to be reimbursed for property consumed in service until the property is actually retired.

The determination of the annual allowance for depreciation expense is more complicated than with the straight-line method. The annual charge is that sum which, at compound interest,³⁹ will accumulate a fund equal to the service

³⁸ Mr. Justice Brandeis's answer to a similar objection in the *United Railways and Electric* case deserves notice. (280 U.S. 234, 262-264.)

³⁹ The rate of interest assumed for sinking-fund purposes may be less than the fair return being earned by the utility. Such difference in interest rates, if it exists, may be thought of as the remuneration to management for the administration of the depreciation funds.

value of the depreciable property when the date arrives for its retirement.⁴⁰

The administration of the reserve under the sinking-fund procedure may vary with the utility. If the utility has need for additional capital funds, the depreciation funds will presumably be invested in its property. The earnings on the reserve accrue as a credit to the reserve; hence it is not customary with sinking-fund accounting to deduct the accrued depreciation in determining the rate base.⁴¹ If the utility has no need for additional capital, the depreciation funds may be invested in its securities or in readily marketable securities.

The sinking-fund method possesses most of the advantages of the straight-line method; it lacks the extreme simplicity in the calculation of the depreciation allowance and in the management of the reserve that characterizes the straight-line method. It is said that it possesses the further advantage of recognizing the earning power of money, but this is largely a matter of spreading the burden of depreciation differently throughout the life of the depreciable property. There are two real advantages inherent in sinking-fund accounting. In the early developmental years, the sinking-fund method imposes a smaller burden on operating expenses. The second advantage is associated with rate

⁴⁰ The following formulae illustrate the sinking-fund method of computing depreciation charges.

The symbols used are identical with those of the straight-line formulae, *infra* at page 264. In addition,

r = the rate at which the sinking-fund is compounded.

The depreciation charge for each accounting period is

$$D = \frac{(C-S)r}{(1+r)^n - 1}.$$

Similarly, the accumulated credit to the Depreciation Reserve at the end of the k^{th} period is

$$A_k = \left[\frac{(C-S)r}{(1+r)^n - 1} \right] \left[\frac{(1+r)^k - 1}{r} \right].$$

The Fair Return is computed simply by

$R = Ci$.

Finally, the total for Depreciation, including interest, and for the Fair Return is

$$E_k = Ci + \frac{(C-S)r}{(1+r)^n - 1} + \left[\frac{(C-S)r}{(1+r)^n - 1} \right] \left[\frac{(1+r)^k - 1}{r} \right] r.$$

The application of these formulae to the example in Table 30 may clarify the situation.

By assumption, $C = 1000$, $S = 0$, $n = 10$, $k = 5$, $i = 6\%$, and we shall also take $r = 6\%$.

The annual depreciation charge is then computed:

$$D = \frac{(1000 - 0) \cdot .06}{(1.06)^{10} - 1} = \frac{60}{.79084770} = \$75.87$$

The total of the accumulated credits to the Depreciation Reserve at the end of the fifth year is

$$A_5 = \left[\frac{(1000 - 0) \cdot .06}{(1.06)^{10} - 1} \right] \left[\frac{(1.06)^5 - 1}{.06} \right] = \left[\frac{60}{.79084770} \right] \left[\frac{.33822558}{.06} \right] = \$427.67.$$

In addition, during the fifth year, the Reserve is increased by a credit representing the interest earned (I) on the balance in the Reserve at the end of the fourth year.

$$I_5 = A_4(.06) = \left[\frac{(1000 - 0) \cdot .06}{(1.06)^{10} - 1} \right] \left[\frac{(1.06)^4 - 1}{.06} \right] (.06) = \$19.91$$

The Fair Return, uniform for each of the ten years of service life, is

$$R = 1000(.06) = \$60.00.$$

The sum of the Fair Return, the depreciation charge, and the interest accumulated for the fifth year is the total annual expense,

$$E_5 = 1000(.06) + \frac{(1000 - 0) \cdot .06}{(1.06)^{10} - 1} + \left[\frac{(1000 - 0) \cdot .06}{(1.06)^{10} - 1} \right] \left[\frac{(1.06)^4 - 1}{.06} \right] (.06) = \$155.78$$

⁴¹ For a discussion of the problems relative to the deduction of accrued depreciation, see Chapter XIII, Sec. 6. To anticipate the later discussion, it may be said that it is customary to deduct accrued depreciation in reaching the rate base, except when the sinking-fund method is followed, unless unusual circumstances make the deduction unfair to the company.

regulation; adherence to sinking-fund accounting relieves the commission of the necessity of determining accrued depreciation for deduction from the rate base.

The disadvantages of the sinking-fund method are largely identical with those of the straight-line method. In comparison with the straight-line method, sinking-fund accounting is more complicated, and where revised predictions with respect to service life necessitate a recalculation and readjustment of the reserve, the operation is slightly more burdensome. Where functional depreciation causes premature retirements the slower accumulation of the sinking-fund reserve, especially for the longer-lived units, leaves a greater spread between service value and accumulated reserve than would result with the straight-line method.

(3) *The annuity method.* The annuity method is more complicated than the sinking-fund procedure. It rests on the same assumptions as the other reserve methods: that depreciation is a cost; that a reserve equal to the service value of the depreciable property should be available at the time of retirement; and that it is possible to forecast service life and salvage value with sufficient accuracy to make prior provision for financing retirements.

The annuity method is founded upon the assumption that the value of property is a function of its capacity to produce income. In the case of any property, its income consists of two elements: an amount equal to the loss in the value of the property attributable to the year's operations, and a profit or fair return on the value of the property. The loss in the value is made the measure of the depreciation allowance, and consists in the loss of the capacity to produce income as of the retirement date. If a unit of property has a service life of 10 years, the first year must be charged with the loss of capacity to produce income 10 years in the future; the second years, with the loss of capacity to produce income 9 years hence, and so on. Thus the allowance for depreciation becomes greater as the loss of income-producing capacity is more imminent.

The application of the annuity method involves the determination of a uniform annual sum equal to the combined return and depreciation allowance for the property. The return element shrinks annually in proportion to the loss in value of the property; the difference between the total annual sum and the amount required to realize the appropriate return on the depreciated value of the property, is the depreciation allowance which is credited to the reserve. For a property having a cost of \$1,000, a service life of 10 years, and no salvage value, assuming the fair return and the annuity rate both to be 6 per cent, the earnings should be \$135.87 annually; in the first year, the fair return is \$60, and the depreciation charge, \$75.87; in the second year, the return is \$55.45 [$.06(1000 - 75.87)$] and the depreciation charge, \$80.42 [$135.87 - 55.45$], and so on.⁴²

There are no differences between the sinking-fund and the annuity methods

⁴² The formula for the total annual expense is

$$E = \frac{(C - S) i}{1 - (1 + i)^{-n}} + Si.$$

that would make the latter significantly more, or less, advantageous than the former. On the theoretical level, it has been suggested that the assumption of the annuity method, that the value of property is derived from its earning capacity, is an assumption dangerous for regulatory authorities to accept. The added complexities of calculation make it less popular than the sinking-fund and straight-line methods.

(4) *A comparison of the reserve methods of accounting for depreciation.* The reserve methods of accounting for depreciation all proceed upon the assumption that it is possible to forecast with reasonable accuracy the future incidence of retirement costs, and that it is both possible and desirable to make provision in advance for the costs of retiring depreciable property. They differ in the methods of calculating the annual charge for depreciation expense, and in the rates of accumulation of the reserves. Under any of these methods it would presumably be desirable to administer the reserve funds in the same manner; that is, either to employ such funds for additions and improvements to the physical facilities of the company, to retire outstanding bonds, or to invest in readily marketable securities. What is not so readily apparent is that the total net cost to consumers and the total of the funds made available to investors should be identical under each of the three reserve methods. These relations can be brought out by reference to Table 30.

The analysis of the results of the reserve methods of depreciation accounting begins with the assumption that the depreciable property has a service value of \$1,000 (or that its cost is \$1,000 and it had no salvage value) and a service life of 10 years. For simplicity, the interest rate on the sinking fund or annuity is assumed to be the same as the fair rate of return, 6 per cent. The second column (*b*) shows the value, or rate base, on which the fair return (*g*) is calculated. The amount of the depreciation expense (*c*) should be observed: it is uniform under the straight-line and sinking-fund methods, but under the annuity method it increases gradually through the life of the unit; the annual charge is greater under the straight-line than under the sinking-fund method; the total charges for depreciation expenses are \$1,000 for either the straight-line or the annuity method, but amount to only \$758.70 for the sinking-fund method. The difference in sinking-fund method is made up from the interest (*d*) credited to the accumulating depreciation reserve.

When the depreciation reserves (*e*) are compared it is observed that each method accumulates \$1,000, the service value of the depreciable property, and that this sum is available only at the end of 10 years. It is important to notice the rate at which the depreciation reserves accumulate under the three methods. The rates of accumulation are identical for the sinking-fund and annuity methods, but both build up more slowly than the straight-line reserve. This discrepancy in the rates of accumulation may be highly significant if there is the possibility of premature retirements from functional factors—obsolescence, inadequacy, or changing regulatory requirements—and under the sinking-fund and annuity methods, the longer the service life the greater the possible deficiency in reserve.

In considering the behavior of the fair return factor, it will be observed that

TABLE 30
COMPARATIVE ANALYSIS OF THE RESERVE METHODS OF ACCOUNTING FOR DEPRECIATION

Year (a)	Rate Base (b)	Depreciation Expense (c)	Interest on Depreciation Reserve (d)	Annual Credit to Deprecia- tion Reserve (e)	Total Accumulated in Depr. Reserve at End of Year (f)	Fair Return			Total of Deprecia- tion Charge and Return (i)
						On Original Investment (g)	On Reinvested Reserve (h)	Total (i)	
STRAIGHT-LINE METHOD									
1	\$1000.00	\$ 100.00	—	\$ 100.00	\$ 100.00	\$ 60.00	—	\$ 60.00	\$ 160.00
2	900.00	100.00	—	100.00	200.00	54.00	6.00	60.00	160.00
3	800.00	100.00	—	100.00	300.00	48.00	12.00	60.00	160.00
4	700.00	100.00	—	100.00	400.00	42.00	18.00	60.00	160.00
5	600.00	100.00	—	100.00	500.00	36.00	24.00	60.00	160.00
6	500.00	100.00	—	100.00	600.00	30.00	30.00	60.00	160.00
7	400.00	100.00	—	100.00	700.00	24.00	36.00	60.00	160.00
8	300.00	100.00	—	100.00	800.00	18.00	42.00	60.00	160.00
9	200.00	100.00	—	100.00	900.00	12.00	48.00	60.00	160.00
10	100.00	100.00	—	100.00	1000.00	6.00	54.00	60.00	160.00
Total	—	1000.00	—	1000.00	—	330.00	270.00	600.00	1600.00

SINKING-FUND METHOD		ANNUITY METHOD							
I	1000.00	I	1000.00	75.87	75.87	75.87	75.87	60.00	135.87
2	1000.00	2	924.13	75.87	80.42	75.87	156.29	60.00	140.42
3	1000.00	3	843.71	75.87	85.24	85.24	241.53	60.00	145.24
4	1000.00	4	758.46	75.87	90.36	90.36	331.89	60.00	150.36
5	1000.00	5	668.10	75.87	95.78	95.78	427.67	60.00	155.78
6	1000.00	6	572.32	75.87	101.53	101.53	520.20	60.00	161.53
7	1000.00	7	470.79	75.87	107.62	107.62	630.82	60.00	167.62
8	1000.00	8	363.47	75.87	114.08	114.08	750.90	60.00	174.08
9	1000.00	9	249.09	75.87	120.92	120.92	871.82	60.00	180.92
10	1000.00	10	128.16	75.87	128.18	128.18	1000.00	60.00	188.18
Total	—	Total	—	758.70	1000.00	1000.00	—	600.00	1600.00
				241.30	758.70	758.70	—	600.00	1600.00
				45.05	120.92	120.92	—	60.00	180.92
				38.21	114.08	114.08	—	60.00	174.08
				31.75	107.62	107.62	—	60.00	167.62
				25.66	101.53	101.53	—	60.00	161.53
				19.91	95.78	95.78	—	60.00	155.78
				14.49	90.36	90.36	—	60.00	150.36
				9.37	85.24	85.24	—	60.00	145.24
				4.55	80.42	80.42	—	60.00	140.42
				—	75.87	75.87	—	60.00	135.87

the fair return on the original investment (g) declines in proportion to the theoretical decline in the value of the depreciable property for the straight-line and annuity methods, but that the return is undiminished if the sinking-fund accounting is used. This difference has already been explained; accrued depreciation is not deducted in determining the rate base when the sinking-fund method is used because the interest on the accumulating reserve is required to build up the reserve balance at the requisite rate (d). By contrast, the earnings of the reinvested depreciation reserve under the straight-line and annuity methods (h) are treated as a part of the fair return available for distribution as dividends, so that the total of the fair return (i) is \$60 per year for all three methods. Likewise, the total of the charges for depreciation plus the fair return (j) are alike over the life of the depreciable property, aggregating \$1,600. As in the case of the depreciation expenses, however, there is an important difference in the distribution of this total income through succeeding years. The total of depreciation charge and return is uniform at \$160 for the straight-line method; but for the other two methods, the total increases from \$135.87 in the first year to \$188.18 in the tenth year. This difference may be significant for a utility which is just beginning business and experiencing difficulty in earning a satisfactory income. If this difficulty of the early years can be overcome, there are good reasons for preferring the straight-line method.

(5) *The transition to reserve accounting.* The present tendency of regulatory authorities is to favor the adoption of reserve accounting for depreciation in place of the renewal and retirement accounting generally followed in the past by other than telephone companies. The adoption of reserve accounting by a mature utility will not result in the accumulation of a depreciation reserve equivalent to the accrued depreciation present in its properties unless the annual depreciation charges are thereafter in excess of the sum that would be required to cover the depreciation costs currently accruing. To approve this enhanced accrual rate would impose on present consumers a part of the costs of the service to an earlier body of consumers and would be to that extent discriminatory and undesirable. If the utility has accumulated a sufficient earned surplus, it may be possible to establish a reserve commensurate with the then accrued depreciation through a charge against the surplus and a corresponding credit to the reserve for depreciation. If no such surplus is available, it may be possible to create a capital surplus through a reduction in the stated value of the outstanding stock, though this procedure might appear too drastic if the utility had been conservatively managed in the past. A third alternative which shifts most of the burden of creating the reserve to the stockholders is to require that the deficiency in the reserve be made good gradually through appropriations from net earnings otherwise available for the payment of dividends. Finally, it would be possible to prescribe reserve accounting for depreciation without attempting to make good the deficiency in the reserve except to the extent that future excess earnings permitted additional appropriations to the reserve.

Other methods of accounting for depreciation. Many utilities have opposed the use of the reserve methods of accounting for depreciation, preferring the greater managerial freedom to be found in certain substitute procedures. Only

three of these alternatives will be considered: the renewal method, the retirement-expense method, and the amortization-of-debt method.

(1) *The renewal method.* The renewal method operates without the use of a reserve. Whenever an existing unit of property is replaced, the cost of the replacement is charged to current operating expenses. If property is retired without replacement, there is the possibility that its cost may continue undisturbed in the asset accounts of the company.

The renewal method has been popular with the steam railroads in the past, and is still widely used for road accounts (ties, rail, et cetera).⁴³ This is a permissible method of handling retirements only where the depreciable property consists of a multitude of practically homogeneous units, each relatively inexpensive. Under such conditions, it is said that the renewal method possesses distinct advantages. Since such properties tend to develop a relatively uniform rate of retirement, it is not unreasonable to treat replacement expense as a recurring operating expense, and there is no necessity for the accumulation of unnecessary depreciation reserves. Since it is usually possible to time replacements for the years of good earnings, it allows management a measure of flexibility in the administration of corporate income.

There are several disadvantages and dangers inherent in the renewal method, especially when applied to properties not composed of many relatively small units or when retirements are not reasonably constant from one year to another. From the accountant's point of view, the renewal method results in an improper allocation of costs as between different accounting periods, overlooking the costs of depreciation when it is not convenient to make replacements. It is also conducive to erratic fluctuations in operating expenses, resulting in overstating net income in poor years and understating it in good years. Similarly, it may be noted that when the replacement costs are either more or less than the unit of property retired, the asset accounts no longer accurately record the cost of the property in use. A related objection is that replacements may not be in kind. Under such circumstances, the users of the service are required to supply part of the capital with which the utility operates, and of course, to pay a return on that capital. The most serious practical objection is the probability that the company will find itself without sufficient funds at a time when replacements are urgently needed. Adherence to the renewal method exposes the company to an unfavorable decision with respect to its rate base if it should ever appeal to the courts from a commission rate order.⁴⁴

(2) *The retirement-expense method.* The retirement-expense method of handling depreciation has been popular with those who have objected to reserve accounting. The basic assumption on which the advocates of retirement-expense accounting rest their case is that no depreciation exists in a well-maintained and efficiently operating property. They look to the going concern,

⁴³ Prior to the Interstate Commerce Commission's requirement of depreciation reserve accounting for equipment, it was customary for the railroads to handle equipment replacements on a renewal basis.

⁴⁴ The Supreme Court has held that accrued depreciation should be deducted in determining the rate base; hence a failure to build up assets equivalent to the accruing depreciation may lead to a permanent impairment in the rate base of the company. The courts do not inquire into the reasons for the inadequacy of the depreciation reserve. See Chapter XIII, Sec. 6.

not to the individual units of depreciable property, and if there is no deferred maintenance—that is, if it would not be economically desirable to make expenditures for replacements and repairs—they contend that the plant is undepreciated for operating purposes. Retirement-expense accounting has been widely used by electric and gas utilities, and was approved by an early system of accounts adopted by many of the state commissions.

Though there is no uniformity in the application of the retirement-expense procedure, this accounting for depreciation may be described in general terms. The charges for retirement expense and the appropriations from surplus are treated as matters of executive, rather than accounting, responsibility; that is, the charges for retirement expenses and the appropriations from earned surplus or surplus earnings to the retirement reserve are matters of policy to be determined by the management. The function of the retirement reserve is limited to equalizing fluctuations in annual retirement costs, and no attempt is made to accumulate a reserve equal to the accrued depreciation. The reserve is built up in years when retirement costs are light or when earnings are large; in years when earnings are small, there may be no provision at all either for retirement expenses or retirement reserves; and in years when retirement costs are high, a part of the expenditures may be covered by the current charges to retirement expenses and a part may be charged against the retirement-reserve account. It is generally thought that a retirement reserve of 10 to 20 per cent of the investment in depreciable property is sufficient.

Those who advocate retirement-expense accounting claim many advantages for this procedure. It is contended that the reserve methods accumulate sums far in excess of any that will ever be used in financing depreciation. If not burdened with unnecessary reserve requirements, the company, it is said, is in a better position to seek an enlarged market through promotional rates, thus benefiting consumers. It is also argued that the company, being relieved of rigid depreciation requirements, can adopt a more intelligent policy in the administration of income, establishing and maintaining a stable dividend policy without awaiting the accumulation of a large surplus. Much of the case for retirement-expense accounting rests upon an alleged weakness of the reserve methods: it is asserted, with abundant illustrations, that it is impossible to predict accurately either the service life or the salvage value of depreciable property, and it is claimed as an advantage of the retirement-expense method that it avoids the necessity for such fallacious and inaccurate forecasts.⁴⁵ From the consumers' point of view it should be noted that retirement accounting results temporarily in smaller average charges for depreciation, especially for an expanding utility.

There are what appear to be serious objections to the reliance upon retirement-expense accounting. (i) Its basic fallacy is ignoring the inescapable fact that depreciation is an operating expense, accruing irrespective of corporate earnings and the exigencies of financial policy. (ii) The experience of many utilities has demonstrated that the replacement costs do not in fact exhibit

⁴⁵ The case for retirement accounting has been effectively presented by Nash, *The Economics of Public Utilities*, pp. 75-90.

that uniformity which is so often assumed by advocates of retirement-expense accounting. The reserve methods provide much better insurance against unusual concentrations of replacement costs. (iii) The retirement-expense procedure must result in an inequitable distribution of depreciation costs among consumers of different periods. In contrast, reserve depreciation attempts to allocate as accurately as practicable the costs of retirement to the consumers who benefit from the use of the depreciating property. (iv) The adoption of retirement accounting provides both the temptation and the opportunity for management to engage in manipulation of earnings. Although there is no reason why management should not make use of the same life tables and adhere to the same policies that the accountants use in estimating depreciation according to the reserve methods, the fact is that retirement provisions are frequently manipulated to give a false appearance of stability to the earnings of the corporation. (v) The postponement of recognition of losses from depreciation may be extremely dangerous for the company. A failure to make adequate provision for depreciation through the accumulation of sufficient reserves exposes the company and its consuming public to the possibility of a deterioration of service and an impairment of credit which might increase the cost of capital to the utility. (vi) Finally, the failure of the retirement-expense method to provide a reserve equivalent to the accrued depreciation exposes the company to the danger of an adverse finding with respect to the fair value of its property, if it should be necessary to seek a review of a commission rate order in the federal courts.

(3) *The retirement-of-debt method.* In the discussion of the reserve methods of providing for depreciation it was pointed out that depreciation funds are commonly invested in additions and improvements to the property of the company, and that in such circumstances it is customary for the company to issue new securities "to reimburse the corporate treasury" when replacements are to be financed. There is no reason why this plan may not be applied in reverse; that is, the corporation may retire its outstanding debt (or even some of its preferred stocks if it has no debt) as an offset to accruing depreciation and then reissue securities to finance replacements. This procedure would provide the company with the funds requisite for replacements and also avoid any overcapitalization, since the outstanding securities would never exceed the value of the corporate assets.

The practical operation of retirement-of-debt plan may be studied in the operations of municipal and other publicly owned utilities. It is customary for public enterprises to follow a vigorous policy of debt retirement; and if the debt retirements keep pace with the accruing of depreciation, there is no necessity to make additional provision for retirements and replacements. Some publicly owned utilities are so successful that they have not only retired outstanding obligations and provided for capital expansion out of earnings, but they have also accumulated large depreciation reserves.

(4) *Amortization.* Amortization is a procedure whereby the costs of assets are retained in the accounts, presumably earning a return, until they have been "written off" by debits (additions) to operating expenses and deductions from

(credits to) the asset accounts. As applied to depreciation accounting, it is a method of charging the capital cost of an asset to operating expenses *after* the service life of the asset has terminated.

The amortization method might be presented as the logical extreme for those who protest against the uncertainties of predicting the service life and salvage value of depreciable assets. The charges for the exhaustion of the asset are delayed until there is absolute certainty with respect to such costs. However, the amortization procedure is seldom adopted deliberately. The resort to amortization is usually forced by the inadequacy of the depreciation reserve to carry the costs of retirements. Rather than deduct the full cost of the retired asset from the capital accounts when the reserve is insufficient, which might show an impairment in the capital of the corporation, the undepreciated balance of the asset account is either continued in the asset account or it is carried as a "suspense item" on the asset side of the balance sheet. Thereafter the undepreciated balance of the asset is charged to operating expenses (or amortized) as the earnings of the corporation permit. Amortization may be justified when the retirement of the property was unforeseen or when the earnings of the corporation were insufficient to permit the establishment of adequate reserves. For the most part, however, regulatory authorities look with disfavor on continuing the charges for an asset that is no longer in use, and a heavy burden of proof rests on the company to defend the amortization of the undepreciated balance of retired property.

The disadvantages and dangers of the amortization method can be presented quite briefly. Amortization results in an inequitable distribution of the costs of depreciation, placing on consumers of a later period the cost of capital used in serving an earlier body of consumers.⁴⁶ There is always the possibility that the future earnings of the company may be insufficient to amortize past capital losses and still provide a reasonable return on capital currently employed. The financing of replacements by new security issues will result in a discrepancy between the value of the company's assets and its capitalization, a discrepancy which may impair its credit. The ultimate outcome may be losses to investors and deterioration of service for consumers. Amortization is in no sense a satisfactory way of meeting the regular costs of depreciation.

REVISIONS AND "WRITE-UPS." A very perplexing problem of accounting control survives as the by-product of the holding-company finance of the 1920's. Many operating companies, as well as the holding companies, still record asset valuations based on the prices at which properties and securities were acquired as part of the empire-building of the holding companies or which were written into the accounts as the result of an appraisal of operating-company properties on the basis of the reproduction costs of the 1920's. The manner in which these "write-ups" occurred and their effects on consumers and investors have been described as part of the story of the holding company.⁴⁷

Write-ups present the following problems: Shall utility corporations be re-

⁴⁶ Utilities have sometimes argued that, where the premature retirement of property has resulted in the introduction of more efficient and less costly methods, it is appropriate to recover the costs of amortization from subsequent earnings. See *Pacific Gas & Electric Co. v. San Francisco*, 265 U.S. 403, 407-410 (1924).

⁴⁷ Chapter IV.

quired to correct their books to eliminate the write-ups that recorded existing assets at a sum greater than their original cost when first devoted to utility service? What effects shall such reappraisals have on other aspects of regulation—the control of rates, securities issues, et cetera?

The uniform system of accounts promulgated by the Federal Power Commission and the Federal Communications Commission have sought to secure a statement of all utility assets at their original cost, which is defined as the cost at the time the assets were first devoted to the public service. Though the mere adoption of such accounting rules does not determine the status of write-ups, it does permit a clear analysis of the problem with respect to the particular utility. It is highly desirable that the state commissions should follow this lead in securing a restatement of the capital accounts to reflect original cost. When, in the normal course of regulation, instances of write-ups have come to the attention of regulatory authorities, the companies have sometimes been ordered to make corrections.⁴⁸ Certainly such corrective measures may be required before permission is granted for further increases in capitalization.

It is impossible to generalize as to the significance of write-ups on other than the accounting phases of regulation. In one instance where the individual members of the Securities and Exchange Commission had occasion to discuss the problem, write-ups of \$7,000,000 having been found in a total capitalization of \$21,000,000, the tenor of their opinions was that write-ups should not become the basis for security issues.⁴⁹ The reorganizations under Section 11 of the Holding Company Act of 1935 offer an opportunity to reverse these write-ups in the accounts of the holding companies, and many of the plans which holding companies have submitted in partial compliance with that requirement have eliminated some of the write-ups. At the moment, the more serious problem centers in the correction of the accounts of the operating companies.

NON-UTILITY AND MULTIPLE-UTILITY ACTIVITIES. Many operating utilities engage in activities which are not, properly speaking, a regular part of their utility service. In some instances, these activities are associated with the wider development of the market, as in the sale of appliances and merchandise to consumers, or the activity may pertain to the improvement of the service and partake of the character of research and experimentation; in other instances, the activity may be quite unrelated to the regular conduct of the utility, as when a company engages in real-estate or industrial operations.

The function of accounting control, where a utility engages in several activities, is to secure the most accurate segregation possible of both the capital and income accounts for each activity. Each activity should be distinct, without support or burden from the other activities. It is especially important that utility consumers shall not be asked to carry part of the costs of less profitable or more speculative ventures. The segregation costs should be carried to the point of providing a breakdown for all joint costs, as rent, interest, and execu-

⁴⁸ *Re Nevada, C. & O. Teleg. & Teleph. Co.*, P.U.R., 1929D, 43 (Cal., 1929); *Re Vincennes Water Supply Co.*, No. 9036, April 20, 1928 (Ind.); *Re Wisconsin Fuel & Light Co.*, P.U.R. 1927D, 748 (Wis., 1927).

⁴⁹ *Central Illinois Electric & Gas Co.*, 5 S.E.C. 115 (1939).

tive officers' salaries. As a matter of public policy, the utility should probably be under a heavy burden of proof to justify entry into businesses other than its principal public service, and if accurate allocation of costs is not possible it may be the part of wisdom to forbid non-utility activities to public service companies.

THE CONTINUOUS-INVENTORY PLAN. The continuous-inventory plan is the adaptation of accounting and engineering techniques to the valuation process in rate regulation. An unanswerable criticism of public utility regulation has been its excessively time-consuming and costly valuations causing rate cases to extend over months and even years. The virtue of this plan lies in making continuously available the so-called valuation elements—original cost, reproduction cost, accrued depreciation, and other data essential to the determination of the fair-value rate base—so that proceedings involving the level of utility charges may be promptly completed.

The popularization of the continuous-inventory idea is largely due to its practicality as demonstrated by the experience of the Interstate Commerce Commission. On the basis of its preliminary work in this direction, the Commission, in the petition for a 15 per cent increase in freight rates in 1931, was able within a period of six weeks to prepare and present all of the studies, records, and data necessary for the consideration of the value of the railroads as a whole and by recognized rate-making groups.⁵⁰ The increasing pressure for the more expeditious disposition of rate cases has caused state authorities to explore the possibilities of the method, and New York and Wisconsin have been among the leaders in adopting the technique.⁵¹

The basic principles of the continuous-inventory plan are not new, nor are they original with the utility industries. The practice has long been commonplace in the inventory accounting of industrial and commercial enterprises. In the utility industry, the adoption of similar methods was delayed by the complexity of the fixed capital records and the high costs of installing and maintaining such a system. Its practical use by utilities depends upon the classification of fixed assets, especially those of relatively minor importance in influencing the final result, in such a way as to economize time and expense.⁵² Flexibility in the adaptation of the plan to the requirements of the individual corporation is also essential to a satisfactory program.

It is the objective of the plan to supply the commission and management with data with respect to the "valuation elements." The contemporary principles of rate regulation call for information as to (1) the original or historical cost of the properties, (2) the cost of the properties to the present utility owner, (3) the cost of reproduction as of the date of inquiry, (4) the accrued depreciation, and (5) the working capital of the corporation. Proof of the existence of property and of its use in the public service must also be presented.

The administration of the plan involves five operations, each of which pre-

⁵⁰ 46 Ann. Rep. I.C.C. 90 (1932). See also 50 Ann. Rep. I.C.C. 103 (1936).

⁵¹ New York, *Public Service Law*, Chap. 287, Sec. 114 (*Laws of 1934*). Ayres, "The Wisconsin Commission's Continuous Inventory Plan," *Public Utilities Fortnightly*, 13: 755-761; 14: 20-27 (1934). The Wisconsin plan was inaugurated in June, 1933.

⁵² It has been estimated that the Wisconsin plan would entail a cost of \$2 to \$4.50 per thousand dollars of gross additions and retirements. (Ayres, *op. cit.*, p. 758.)

sents its characteristic problems. (1) The development of the *basic inventory* is the first step in the establishment of the plan. The inventory may be prepared specifically for the inauguration of the plan or inventories developed in conjunction with previous valuations may be revised.

The first operation in the preparation of the inventory involves the choice of the units for recording the property. The inventory should conform to the Uniform Classification of Accounts. The units in which the property is reported will be determined by their appropriateness for the recording of additions and retirements and for pricing; wherever possible it is desirable that the units for recording retirements and the units for pricing should be identical. The choice of the units for the inventory will be determined by the degree of detail to be observed in the administration of the continuous-inventory plan. A substantial measure of detail is justifiable where errors with respect to certain categories of property would have significant effects upon the validity of the final valuation figures; on the other hand, refinements in detail may reasonably be foregone where any resulting error is insignificant.

(2) The basic inventory is supplemented by *plant measurement records*. These records provide proof of the existence of the property. It is the purpose of these records to supply all the descriptive information that is required, including the detailed engineering specifications and cost records.

(3) *Original-cost records* are uniformly adopted as the basis for the continuous-inventory plan. If the original-cost figures are not available, historical-cost estimates may be substituted. As the plan becomes more mature, the process of retirements and replacements will supply an increasingly reliable record of the actual original cost of the property in use. Although in its original valuation work it was often unable to determine the actual cost of railroad properties, the Interstate Commerce Commission reported in 1933 that accurate original-cost figures were then available for 70 per cent of the railroad properties.⁵³ The more recent uniform systems of account provide that original cost shall be recorded in terms of cost to the owner who first devoted the property to the public service, but provision is also made for recording the original cost to the present utility owner.

(4) The integrity of the plan is dependent upon careful *records of retirements, replacements, and additions*. Retirements should be accounted for on the basis of the cost figures at which the assets are recorded in the capital accounts, but where an account is composed of a multiplicity of small units so that the identity of the individual unit cannot be preserved without excessive expense it is permissible to use average costs or some similar short-cut device. For all important units of property, the actual cost of each particular unit will be known and used.

(5) The *pricing* operation is necessary because the present-value method is thought to require the consideration of reproduction cost. The reproduction-cost estimate is determined by the application of appropriate index numbers to the basic inventory which is recorded in terms of original cost. As the method is usually applied, the index numbers are developed with specific reference to the experience of that particular type of utility in that section of

⁵³ 47 Ann. Rep. I.C.C. 73 (1933).

the country, and may even be based upon the actual cost experience of the company whose rate base is being determined.

Some fifteen states now require utilities to maintain "continuing property records." The legality of the method has yet to be tested in the highest federal court, but in a skirmish in the New York courts a challenge to a commission order prescribing continuous-inventory accounting was rejected.⁵⁴

Only a tentative judgment may be pronounced on the continuous-inventory plan until fuller experience has demonstrated whether it will fulfill the prophecy of its proponents. If satisfactory administrative procedures are evolved, it is probable that the usually expensive and contentious valuations will be unnecessary in fixing a rate base. And certainly the procedure for establishing rates will be rendered more definite and efficient. To the consumers and regulatory authorities the plan holds out the possibility of adjusting rates promptly to changing conditions, the promise of a quicker disposition of rate cases, and a reduction in the costs of regulation. To the companies the same advantages are significant, and with the reduction in the amount of rate litigation the companies may hope to benefit from the evaporation of the suspicion and distrust with which the utility companies are so often regarded.

BUDGET CONTROL. The preparation of budgets for both operations and construction has become an increasingly important instrument of managerial control by all corporations. Advanced planning with respect to operations and construction is more important for utility companies than for other businesses, since the utility is under obligation to furnish adequate service at all times. Yet the construction of additional capacity often requires months or even years, and the capital funds for additions and improvements can seldom be drawn from earnings, but require the sale of new securities to the public. The preparation of the utility's budgets is based thus upon a forecast of the demands for the utility's product or service, the drawing of plans for addition and improvements and estimates of their costs, and the preparation of financing plans.

The preparation of construction budgets offers an exceptional opportunity for increasing the effectiveness of commission control over expansion and capitalization without imposing on the utility companies enlarged expenses in complying with regulatory requirements. It is, therefore, highly advisable to call upon utility companies to furnish the commission with construction and financing budgets for not less than a year in advance. If any utilities are not already preparing such budgets, this requirement will work an improvement in their management by assuring that such fundamentally important matters will be planned and considered in advance.

The preparation and submission of an operations budget would supply another instrument for increasing the effectiveness of regulation. The annual budget of income and expenditures would list the estimates of income from various categories of service, the requirements with respect to taxes, depreciation, interest, and dividends, and the details with respect to operating expenses. Such budget estimates would make commission regulation of operating expenses really effective, since supervision might come before, rather than after,

⁵⁴ *N.Y. Edison Co. v. Maltbie*, 244 App. Div. 685, 693, 281 N.Y. Supp. 223, 232 (1935); affirmed 271 N.Y. 103 (1936).

the utility has made the expenditure. Under a statutory provision of 1933, Oregon has pioneered with the requirement of an annual budget filed on November 1 for the calendar year beginning with January 1.⁵⁵

COST FINDING. One of the ultimate objectives of accounting control is the more accurate determination of the costs at which particular services are rendered. In the past, utility accounting systems have been designed to do little more than supply the facts with respect to the overall costs of operation; they have not attempted the refinements requisite for more precise cost finding. Though the accounting classifications that have been more recently promulgated require more detail, they also may be criticized for failing to maximize the opportunities to gain additional information with regard to the costs of different services.

⁵⁵ Oregon, *Laws of 1933*, Chap. 441. See also *Re Pacific Tel. & Tel. Co.*, 2 P.U.R. (N.S.) 384 (Or., 1933). New Jersey and Washington also require the advance submission of budgets.

CHAPTER IX

RATE REGULATION

I. INTRODUCTION

Rate regulation, or the authoritative control of the prices charged by public utilities, is the central problem and ultimate objective of all utility control. The prescription and supervision of accounts, the control of capitalization and security issues, the regulation of holding companies and intercorporate relations, have all been added to the responsibilities of the modern commission in order to render its control of rates more effective. Many regulations relating to service—the specification of service standards, the issuance of certificates of convenience and necessity, control of extensions and abandonments—are designed either to assure that the public receives service comparable to the price paid or to prevent the utility from pursuing policies which might impair its ability to maintain adequate service at a reasonable price.

The term "rate" or "rates" is used in a comprehensive sense to denote any price or charge, measured in terms of some specified unit or standard, for a commodity or service supplied to the public by a public service corporation. The process of rate regulation begins with a definition of the unit or standard in terms of which the good or service is to be sold, imposes certain formalities upon the company in quoting the prices for its services, and specifies the circumstances under which designated public authorities are required to approve or to modify the rates of companies subject to their jurisdiction. The immediate objectives of rate regulation are twofold: to assure that the general level of charges and the charges for each category of service are "reasonable," and to eliminate and prevent any discrimination between different classes of consumers. While ultimate responsibility and authority for the regulation of public utilities rests with the legislative branches of the state and federal governments, courts, commissions, and municipal agencies all participate actively in the tasks of rate regulation, though the bulk of the work is done by state and federal commissions.

The demand for rate regulation arises from the nature of the relations between consumers and the utility corporation. The absence of competition places the consumer at a disadvantage which he does not encounter in normal business transactions where he is free to give or withhold his patronage according to his satisfaction with the price and quality of the good or service offered. Nor can the situation be improved by a restoration of competition. As experience has amply demonstrated, competition in the rendition of utility services usually results in economically wasteful duplication of capital facilities, temporary price cutting and impairment of service, and finally, financial failure, restrictive agreements or combination and merger, followed by high rates to recoup earlier losses.

The dissatisfaction of the consumer with high rates and poor service is not the gravest of the evils to be expected from either unregulated competition or

monopoly in the utility field. The undue restriction of the market for utility services, a consequence either of unnecessarily high prices or of a failure of the corporation to extend the physical facilities needed to bring the service to more people, may cause the whole community to suffer a deterioration in standards of health and of social and economic welfare. Poor sanitary conditions, insufficiency of heat and light, a lack of refrigeration, inadequate transportation facilities causing crowded slums—all of these conditions represent costs to the community in terms of increases in disease and poor health, of lowered efficiency of workers, and of a stimulation to lawlessness and disorder.

Rate regulation in terms of preventing excessive charges or limitations on the availability of the service does not embrace the whole case for a regulation of utility charges. Equally important to the business community is the assurance that there shall be no undue discrimination in charges of service.

Finally, there are situations where the regulation of the minimum charges may be essential. Thus where two or more corporations are serving the same community, price competition between them may assume a destructive character, leading to a dissipation of the investors' properties and an impairment in service.

Rate regulation involves a dual problem: (i) there is the control of the total income derived by the utility from all its service, and (ii) there is the question of the extent to which each customer or class of customers should contribute to this total income. The first is the problem of the general level of charges or the "fair return," and is the subject of this chapter. The second is the problem of rate structures, and will be considered in Chapter X.

2. LEGAL BASIS FOR RATE REGULATION

THE POLICE POWER. The legal foundation for the regulation of the rates or charges of public service corporations and other "businesses affected with a public interest" is inherent in the power of sovereign governments.¹ Except for the federal government, a government of limited and enumerated powers, the existence of such power is not dependent upon any specific grant in the constitution of the state, but is a part of that undefined residue of sovereign authority commonly referred to as the "police power."

Utility regulation is a function of the legislative branch of the government. It is commonly exercised both directly by the legislature through the enactment of specific statutory requirements, and indirectly through delegation of authority to some subordinate branch of the government, as to a municipal council or a regulatory commission. This power to regulate has been recognized in every leading case that has come before the courts since 1877.²

¹ Chapter I.

² *Munn v. Illinois*, 94 U.S. 113 (1877); *Chicago, B. & Q. R. Co. v. Iowa*, 94 U.S. 155 (1877); *Piek v. Chicago & N. W. R. Co.*, 94 U.S. 164 (1877); *Spring Valley Water Works v. Schottler*, 110 U.S. 347 (1884); *Stone v. Farmers' Loan & Trust Co.*, 116 U.S. 307 (1886); *Dow v. Beidelman*, 125 U.S. 680 (1888); *Georgia R. & Banking Co. v. Smith*, 128 U.S. 174 (1888); *Chicago & G.T.R. Co. v. Wellman*, 143 U.S. 339 (1892); *Budd v. New York*, 143 U.S. 517 (1892); *Brass v. N.D.*, 153 U.S. 391 (1894); *Covington & L. T. Rd. v. Sandford*, 164 U.S. 578 (1896); *Smyth v. Ames*, 169 U.S. 466 (1898); *Lake Shore & M. S. R. Co. v. Smith*, 173 U.S. 684 (1899); *German*

Freedom in choice of form of regulation. In general, it may be said that where the power to regulate exists, the legislature is free to adopt whatever form of regulation appears appropriate to remedy the evils encountered. In the light of recent pronouncements of the Supreme Court, it would seem that the implications of certain earlier decisions—to the effect that the regulation of the price charged for a good or service was a more serious interference with the rights of property than other forms of regulation and would be permitted only for businesses “affected with a public interest”³—have been superseded. This at least would seem to be the force of Mr. Justice Roberts’s opinion in upholding the constitutionality of the New York Milk Law, in 1934.⁴

THE STATE LEGISLATURE’S POWER. Rate regulation is generally considered a legislative function, whether undertaken by the legislature directly or by some subordinate body, for it involves the making of rules and regulations to govern the future conduct of the utility.⁵

The legislative character of rate regulation has been uniformly recognized by the courts in decisions denying that the judiciary possessed the power to establish rates and holding that the courts might interfere with rates established under legislative authority only when the legislature had acted beyond its jurisdiction, or had violated rights protected by the Constitution.⁶

Limitations on state legislature’s power. The power of the legislature in the regulation of the rates and charges of utility corporations is subject to limitations of both an economic and a legal character. So long as utility service is supplied by private corporations whose ability to serve is dependent upon additional investments by individuals, both the industry and the regulatory authorities are limited by the necessity of maintaining a satisfactory investment standing for utility securities. Likewise, to enlist the requisite skills and abilities, the industry must be in a position to pay salaries that render employment therein at least as attractive as employment in other undertakings. While these economic limitations are frequently overlooked, they are more inexorable than

Alliance Ins. Co. v. Kansas, 233 U.S. 389 (1914); *Nebbia v. New York*, 291 U.S. 502 (1934); *Townsend v. Yoemans*, 301 U.S. 441 (1937); *Olsen v. Nebraska*, 313 U.S. 236 (1941).

³ *Tyson & Brother v. Banton*, 273 U.S. 418 (1927); *Ribnik v. McBride*, 277 U.S. 350 (1928); *Williams v. Standard Oil Co.*, 278 U.S. 235 (1929).

⁴ *Nebbia v. New York*, 291 U.S. 502, 531, 532, 539 (1934).

⁵ Some writers have urged that rate regulation by a public service commission under delegated authority from the legislature be regarded as an “administrative” or “ministerial” function. Something more useful is the suggestive distinction between rate regulation as a legislative function when a governmental agency is given power to fix and determine rates without the necessity of securing the concurrence of the utility, and rate regulation as a contractual function when it is one of the conditions of a franchise granted by a municipality or other political subdivision.

When regulation is concerned with the reasonableness of past rates, as when the Interstate Commerce Commission seeks to determine whether reparation should be awarded for excessive rates collected in the past, the regulation is of a judicial character; but when the Commission turns to the establishment of rates for the future it is functioning in a legislative capacity. *Baer Bros. Mercantile Co. v. Denver & R. G. R. Co.*, 233 U.S. 479 (1914); *Great Northern Ry. Co. v. Merchants Elevator Co.*, 259 U.S. 285 (1922); *Arizona Grocery Co. v. Atchison, T. & S. F. Ry. Co.*, 284 U.S. 370 (1932).

⁶ *Smyth v. Ames*, 169 U.S. 466 (1898); *San Diego Land & Town Co. v. Jasper*, 189 U.S. 439 (1903); *Stanislaus County v. San Joaquin & King’s River Co.*, 192 U.S. 201 (1904); *Knoxville v. Knoxville Water Co.*, 212 U.S. 1 (1909); *Willcox v. Consolidated Gas Co.*, 212 U.S. 19 (1909); *Minnesota Rate Cases*, 230 U.S. 352 (1913); *Pacific Gas & E. Co. v. San Francisco*, 265 U.S. 403 (1924).

legal and constitutional restrictions, and no escape from them exists so long as the industry continues in private ownership.

The legal limitations on the powers of the legislatures have attracted more attention than the economic. The limitations on the powers of commissions, courts, and municipalities will be considered when their respective functions in the regulation of utility rates are discussed. For the moment, the analysis is confined to the powers of the state legislatures. In the exceedingly broad terms of the Supreme Court's decision in *Nebbia v. New York*, "a state is free to adopt whatever economic policy may reasonably be deemed to promote public welfare, and to enforce that policy by legislation adapted to its purpose."⁷ But this apparent freedom of action is limited by the powers which reside in the federal government. First, the states may do nothing which will interfere with the powers conferred upon the federal government. Secondly, the constitution itself forbids many activities to the states; e.g., treaties with foreign countries, the passage of ex post facto laws, or the impairment of the obligations of contract. And finally, the courts have so interpreted the Fourteenth Amendment as to impose limitations in the name of preventing the state from depriving "any person of life, liberty, or property, without due process of law" or from denying "to any person . . . the equal protection of the laws." Similar limitations are also imposed by most of the state constitutions. Each of these limitations merits brief description.

(1) Among the first group of limitations it is only the exclusive jurisdiction of the federal government over interstate and foreign commerce that constitutes any serious interference with the regulatory functions of the states. Thus the regulation of the steam railroad has passed largely into the hands of federal agencies, and a similar tendency is manifest with respect to highway carriers. From its inception, the radio industry has been subject solely to federal jurisdiction. And the development of the holding-company system in the telephone, electric, and gas industries has seriously hampered the efficiency of state control and has resulted in federal legislation.

(2) Of the activities forbidden to the states by the federal constitution, the prohibitions against ex post facto laws and the impairment of the obligations of contract have most frequently been cited to challenge regulation by the states. Under a wide variety of circumstances, businesses placed under state control have sought an immunity from control in the plea that the particular regulations "impaired the obligations of contract" as embodied in corporate charters, franchises, and contracts generally. The charter of a corporation is a contract between the state and those who form the corporation, and comes within the protection of the constitutional prohibition against impairing the obligations of contracts.⁸ It should be noted, however, that the charter is not protected by the constitution, but only the contract that may be contained in the charter. The right of a utility corporation to regulate its own rates and charges may be embodied in a charter in such terms as to constitute a contract immune from subsequent impairment by the legislature, but all such grants of special privileges and immunities are subjected to the strictest interpretation by the

⁷ 291 U.S. 502, 537.

⁸ *Dartmouth College v. Woodward*, 17 U.S. (4 Wheat.) 518, 627 (Feb. term, 1819).

courts.⁹ Thus a simple grant of a right to collect rates and fares will not be interpreted as preventing the state from subsequently regulating the charges of a utility corporation.¹⁰ It may also be noted that a charter provision that rates shall never exceed a certain amount has not been held to constitute a contract by which the state agrees that rates shall never be reduced below that amount.¹¹ Following the decision of the Supreme Court in the *Dartmouth College* case, it became customary for states to provide in the charter itself, in the constitution, or in the general incorporation laws, that all charters subsequently granted should be deemed to reserve to the state the power of amendment; and such reservations have been recognized by the courts as fully safeguarding the right of the state to undertake the regulation of the rates or other aspects of a corporation's business.¹²

Thus it may be concluded that a state may regulate the rates and charges of any public utility, unless restrained by some clear and positive provision in the charter; that the state may grant a corporation power absolutely to fix its own charges, and where such is the case, any subsequent attempts at regulation of its charges impairs a contractual obligation; but that any such grant of power must be in clear, explicit, and unmistakable language; and that if any reasonable doubt exists, the courts will resolve all such doubts in favor of the continuing existence of the state's powers of regulation.¹³

The significance of private contracts between utility companies and other corporations or individuals may be disposed of quite briefly. The general principle is that such contracts constitute no limitation to the exercise of regulatory powers by the state or its subordinate agents, that such contracts are in no way binding upon regulatory authorities, and that any statutory enactments by the legislature or orders by its commissions are not an unconstitutional impairment of the obligations of contract.¹⁴ The presumption is

⁹ *Knoxville v. Knoxville Water Co.*, 200 U.S. 22, 37-38 (1906). See also *Chicago, B. & Q. R. Co. v. Iowa*, 94 U.S. 155 (1877); *Piek v. Chicago & N. W. R. Co.*, 94 U.S. 164 (1877); *Winona & St. Peter R. Co. v. Blake*, 94 U.S. 180 (1877); *Ruggles v. Illinois*, 108 U.S. 526 (1883); *Georgia R. & Banking Co. v. Smith*, 128 U.S. 174 (1888); *Norfolk & W. R. Co. v. Pendleton*, 156 U.S. 667 (1895); *People's G. L. & C. Co. v. Chicago*, 194 U.S. 1 (1904); *Terre Haute & Indianapolis R. Co. v. Indiana*, 194 U.S. 579 (1904).

¹⁰ *Stone v. Farmers' Loan & Trust Co.*, 116 U.S. 307, 329-330 (1886). Also *Chicago M. & St. P. Ry. v. Minn.*, 134 U.S. 418 (1890); *Southern Pacific Co. v. Campbell*, 230 U.S. 537 (1913).
¹¹ *Chicago, B. & Q. R. Co. v. Iowa*, 94 U.S. 155 (1877); *Piek v. Chicago & N. W. R. Co.*, 94 U.S. 176 (1877); *Beer Co. v. Mass.*, 97 U.S. 25 (1878); *Stone v. Farmers' Loan & Trust Co.*, 116 U.S. 325 (1886); *Georgia R. & Banking Co. v. Smith*, 128 U.S. 174 (1888); *Chicago, M. & St. P. Ry. v. Minn.*, 134 U.S. 418 (1890); *Minneapolis Eastern R. Co. v. Minn.*, 134 U.S. 467 (1890); *Corington & L. T. Rd. v. Sandford*, 164 U.S. 578 (1896).

¹² *Miller v. New York*, 15 Wall. (82 U.S.) 478 (1873); *Holyoke Co. v. Lyman*, 15 Wall. (82 U.S.) 500 (1873); *Chicago, B. & Q. R. Co. v. Iowa*, 94 U.S. 155 (1877); *Shields v. Ohio*, 95 U.S. 324 (1877); *Spring Valley Water Works v. Schottler*, 110 U.S. 347 (1884); *Denny v. Bennett*, 128 U.S. 489, 495 (1888); *Hamilton Gaslight Co. v. Hamilton City*, 146 U.S. 258, 270 (1892); *Adirondack R. Co. v. New York*, 176 U.S. 335 (1900); *Looker v. Maynard*, 179 U.S. 46 (1900); *Bienville Water Supply Co. v. Mobile*, 186 U.S. 212 (1902); *Berea College v. Kentucky*, 211 U.S. 45 (1908).

¹³ In addition to the cases cited immediately above, see *Stone v. Farmers' Loan & Trust Co.*, 116 U.S. 352 (1886); *Louisville & N. R. Co. v. Ky.*, 183 U.S. 503 (1902); *Stanislaus County v. San Joaquin & King's River Co.*, 192 U.S. 201 (1904); *Louisville & N. R. Co. v. Gurrett*, 231 U.S. 298 (1913); *Milwaukee Elec. R. & L. Co. v. R. R. Comm.*, 238 U.S. 180 (1915).

¹⁴ *Union Dry Goods Co. v. Georgia Public Serv. Corp.*, 248 U.S. 372 (1919); *Producers Trans. Co. v. Railroad Comm.*, 251 U.S. 228, 232 (1920); *Ft. Smith Spelter Co. v. Clear Creek Oil & Gas*

that all such contracts were negotiated with a recognition of the continuing power of the state to control the rates charged by public service corporations.

Of even greater practical significance is the recognition of the right of regulatory commissions to set aside contracts between utility corporations when such contracts interfere in any way with the proper performance of the duties of the utilities.¹⁵ With the growth of holding-company systems and the increasing frequency of contracts between affiliated interests, states have found it desirable to amend their utility laws to give their commissions specific authorization to disapprove or set aside contracts which operate contrary to the interests of the public.¹⁶ As a further example of this trend, the Public Utilities Act of 1935 confers upon the Securities and Exchange Commission¹⁷ and the Federal Power Commission¹⁸ the authority and the responsibility to deal directly with all such contracts and to nullify any that are contrary to the public interest.

(3) The most serious and pervasive limitation on the exercise of the state's powers of control over public utilities is to be found in the Supreme Court's interpretation of the Fourteenth Amendment.¹⁹ The development of the right of judicial review of the rates established by the legislature or its agent has been set forth,²⁰ and the evolution of the "present fair value" as the test of the propriety of rates established by legislative authority is traced in detail in a subsequent chapter.²¹ At this point it is sufficient to note that this interpretation of the Fourteenth Amendment has seriously interfered with the freedom of the legislature in the choice of the appropriate instrumentalities and procedures for regulation, and has conferred on the judiciary veto power in virtually all matters pertaining to the control of the rates and charges of regulated enterprises. As a consequence, regulation is not primarily an economic problem to be solved simply by the application of economic remedies; rather, it has become in a very fundamental sense a legal problem, the only solution to which must be economic; and the economic solution must come within a judicially prescribed framework.²²

In addition to this "substantive due process" of the Fourteenth Amendment, the courts have been constant in their insistence that the requisites of "pro-

Co., 267 U.S. 231 (1925); *Sutter Butte Canal Co. v. Railroad Comm.*, 279 U.S. 125, 137-138 (1929); *Midland Realty Co. v. Kansas City P. & L. Co.*, 300 U.S. 109, 113 (1937).

¹⁵ *Portland R. L. & P. Co. v. Railroad Comm.*, 56 Or. 468, 105 Pac. 709, 109 Pac. 273 (1910); *Okla. G. & E. Co. v. Okla. Nat. Gas Co.*, 85 Okla. 25, 205 Pac. 768 (1921).

The right of the commission to set aside utility contracts which interfere with the performance of their duties may be nonexistent where such action is interpreted to be an interference with interstate commerce. (*Public Utilities Comm. v. Attleboro Steam & Elec. Co.*, 273 U.S. 83-93 [1927].)

¹⁶ One of the first of these statutes may be found in New York, *Laws of 1930*, c. 760, Sec. 110 (3).

¹⁷ 49 Stat. 803, Title I, Sec. 12 (f) and (g) and Sec. 13.

¹⁸ 49 Stat. 847, Title II, Part II, Sec. 206.

¹⁹ "All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws."

²⁰ Chapter VI.

²¹ Chapter XI.

²² The full consequences of this situation can be developed only after a study of the details of rate regulation. See Chapter XVI.

cedural due process" be observed by the commissions in all their activities. The procedure to be observed by the commission is usually specified in considerable detail in the statutes, and the minimum requirements have often been enumerated by the Supreme Court. A commission must act only on proper notice, and only after a full and fair hearing. The evidence must be presented in open hearing with opportunity for all parties to rebut any testimony. All commission orders must be supported by adequate evidence, though the judgment of the commission as to the significance of the evidence cannot normally be attacked successfully. A failure to observe any of these requirements has been held sufficient to justify invalidating a commission's order.²³

(4) The powers of the legislature of each state are also circumscribed by the limitations set forth in the state constitution, and in all of the states except Oregon, there is specific constitutional prohibition against the taking of property without due process of law.²⁴

THE FEDERAL GOVERNMENT'S JURISDICTION. Since the federal government is a government of "limited and enumerated powers," authority for any exercise of federal regulatory control must be found within the scope of those powers specifically conferred by the constitution or must be reasonably derived from those powers.²⁵ Though excursions into the realms of regulation and control have been undertaken by the federal government under diverse clauses of the constitution—control over coinage and money, the mails, bankruptcies, copyrights and patents, the war power, and the versatile power of money spent for subsidies—the principal foundations for the exercise of federal regulatory control have been the tax power and the power to regulate interstate and foreign commerce.

3. POWERS AND JURISDICTION OF COMMISSIONS

DELEGATION OF POWERS. The active regulation of the rates and charges of utility companies is, under almost all circumstances, a function of a specially created public service commission. The powers which the legislatures possess in the regulation of businesses affected with a public interest may be delegated in part or in whole to an appropriately constituted administrative agency²⁶

²³ *I.C.C. v. Louisville & N. R. Co.*, 227 U.S. 88 (1913); *Chicago, M. & St. P. Ry. Co. v. Polt*, 232 U.S. 165 (1914); *Chicago Junction Case*, 264 U.S. 258 (1924); *U.S. v. Abilene & Southern Ry. Co.*, 265 U.S. 274 (1924); *Northern Pacific Ry. Co. v. Dept. of Public Works*, 268 U.S. 39 (1925); *Chicago, M. & St. P. Ry. Co. v. Public Utilities Comm.*, 274 U.S. 344 (1927); *West Ohio Gas Co. v. Comm.* (No. 1), 294 U.S. 63 (1935); *West Ohio Gas Co. v. Public Utilities Comm.* (No. 2), 294 U.S. 79 (1935); *St. Joseph Stock Yards Co. v. U.S.*, 298 U.S. 38 (1936); *Morgan v. U.S.*, 298 U.S. 468 (1936); *Ohio Bell Tel. Co. v. Comm.*, 301 U.S. 292 (1937); *Railroad Comm. v. Pacific Gas & Electric Co.*, 302 U.S. 388 (1938); *Morgan v. U.S.*, 304 U.S. 1 (1938).

²⁴ The language of the New York Constitution is representative of that found in the majority of the states: "No person shall be subject to be twice put in jeopardy for the same offense; nor shall he be compelled in any criminal case to be a witness against himself; nor be deprived of life, liberty or property without due process of law; nor shall private property be taken for public use without just compensation." (Art. I, Sec. 6.)

²⁵ "... Let the end be legitimate, let it be within the scope of the Constitution, and all means which are appropriate, which are plainly adapted to that end, which are not prohibited, but consistent with the letter and spirit of the Constitution, are constitutional." (Mr. Chief Justice Marshall, in *McCulloch v. Maryland*, 4 Wheat. 316, 421 [1819].)

²⁶ *Supra*, Sec. 2. Also, *Wyman v. Southard*, 10 Wheat. 1 (Feb. term, 1825).

The propriety of the legislature's delegation to administrative boards of the power to fix rates and charges has been upheld both for the state legislatures and for the Congress.²⁷ While the legislature may not delegate its "purely legislative power" to a subordinate agency, the delegation is properly made if the legislature prescribes appropriate rules, standards, and procedures for the commission; and having established appropriate general rules and standards, the legislature may instruct the commission to make the necessary investigations and findings of fact, and to apply the general principles prescribed to the particular situation.²⁸ But if the legislature is not sufficiently precise and definite in the powers and duties conferred on the administrative agency, if the standards which the commission applies are vague, and if the occasions for the exercise of commission authority are uncertain, the delegation of power by the legislature may be overruled by the courts.²⁹

LIMITED STATUTORY POWERS. The commission is the creature of the legislature and derives all its powers from the legislature. Consequently, it possesses only those specific powers which are expressly conferred by statute and those which by fair implication are incidental to or included in the authority expressly given. Rarely indeed does a legislature attempt to delegate to a commission powers as extensive as those which it could confer; however, the history of utility regulation records a continuing enlargement in the scope and content of regulation as experience has demonstrated the necessity for equipping commissions with more extensive jurisdiction and wider powers. It is hardly necessary to note that the legislature can confer on a commission no powers which are not in harmony with the state constitution, and if further powers are essential to more effective control, resort must be had to the slow process of constitutional amendment.

THE COMMISSION'S RESPONSIBILITIES WITH RESPECT TO RATES. Though the power of the modern commission to fix rates usually extends to all rates and charges, and to all rules and conditions of service, such was not always the case. In the early statutes, a commission's powers over rates became operative only if the commission found that the rates being charged were unreasonable, excessive, or discriminatory. A fundamental feature of all contemporary utility statutes is a provision imposing upon all utility corporations the obligation to charge only "just and reasonable rates" and specifying that all rates not just and reasonable shall be unlawful. Equally important for consumers and company alike is the elimination of all discrimination in service or charges which is not warranted by differences in the cost of the particular service rendered.

In the early days of regulation, the responsibilities of the commission were directed simply to the protection of consumers—to lower rates or to pre-

²⁷ *Stone v. Farmers' Loan & Trust Co.*, 116 U.S. 307 (1886); *Georgia R. & Banking Co. v. Smith*, 128 U.S. 174 (1888); *Reagan v. Farmers' Loan & Trust Co.*, 154 U.S. 362 (1894); *I.C.C. v. Cincinnati, N. O. & T. P. Ry. Co.*, 167 U.S. 479 (1897); *I.C.C. v. Ala. Midland Ry. Co.*, 168 U.S. 144 (1897).

²⁸ *I.C.C. v. Goodrich Transit Co.*, 224 U.S. 194 (1912); *Wichita R. & L. Co. v. Public Utilities Comm. (Kan.)*, 260 U.S. 48 (1922).

²⁹ For recent discussions of the line between proper and improper delegations of legislative power, see *Panama Refining Co. v. Ryan*, 293 U.S. 388, 414 *et seq.* (1935), and *Schechter Corp. v. U.S.*, 295 U.S. 495, 529 *et seq.* (1935).

vent the companies from raising them. It is now recognized that consumers are even more interested in satisfactory service than in the lowest possible scale of charges, and that the maintenance of satisfactory service is dependent not simply on the ability of the corporation to cover its present costs of operation, but also on its success in attracting additional capital when needed. The duties of the contemporary commission with respect to rate regulation may be said to be threefold: (i) to protect the consumer in his right to a satisfactory service at the lowest cost consonant with the service; (ii) to secure to present investors a reasonable return on that part of their investment serving a public need; and (iii) to safeguard the community's long-term interest in a satisfactory service by preserving the financial health of the utility corporation.

DETERMINANTS OF REASONABLENESS. The statement that the reasonableness of rates must be judged from the three points of view of the consumer, the utility, and the community affords no final answer to the question whether any particular rate or schedule of rates is to be denominated "reasonable" by a commission.

The factors affecting the reasonableness of rates are so many and various that it is impossible to enumerate all of the considerations that have been urged upon commissions and courts. The principal factors that have received attention as tests of the reasonableness of rates may be reviewed under the following headings: (1) the cost of service, (2) the value of service, (3) the character of the service, (4) comparisons with other utilities, (5) competitive conditions, (6) general economic conditions, (7) the location of the utility, (8) the history of the particular company, (9) corporate structure or ownership, (10) the influence of former rates, and (11) the wishes of the utility's patrons.

Cost of service. The cost of service is the most important single factor determining the reasonableness of a utility's charges. Its primacy under normal conditions has been universally recognized by commissions and courts. The unanimity of the commissions in according dominant weight to the cost of service is matched by their agreement as to the general nature of "cost": cost of service is regularly assumed to be comprised of operating expenses, including taxes and depreciation, and a "fair return on the investment in the property used in serving the public." This is a criterion which is readily applicable to the business as a whole, and according to this measure the utility should be permitted earnings just sufficient to cover all legitimate expenses of rendering the service. The application of the cost formula to the determination of particular rates is much more complicated, and will be reserved for subsequent consideration.⁸⁰

The acceptance of the cost standard imposes upon the utility an obligation so to conduct its operations that its costs are the minimum necessary to provide that quality of service which is standard for the time and community, and so to keep its records that the particulars of costs may be readily ascertainable. This standard imposes upon the commission the necessity of requiring that the utility's records be so kept that all pertinent data shall be readily avail-

⁸⁰ Chapter X.

able, and makes an inquiry into the expenses and earnings of the utility an essential part of every rate determination.³¹

Three general questions frequently arise in the application of the cost standard. In determining legitimate costs, what allowances should be made for fluctuating prices and changing costs? Has the company maintained appropriate standards of efficiency? What is the "fair return" on the investment?

Where the price level is stable the determination of the costs for the future can be based largely upon the expenses actually incurred in the immediate past. On the other hand, fluctuating price levels and changing costs always result in a multiplication of rate cases where the decision turns largely upon what adjustments the commission will make for past and prospective changes in prices. Where the changes in prices are temporary, commissions are somewhat hesitant to make full allowance therefor in rate adjustments; indeed, during the war period (1917 and after) there were many instances in which the commissions expressed the opinion that the utilities should themselves carry a part of the burdens imposed by rising prices. Though as a general rule it is recognized that rates may rise as costs increase, the necessity for an increase in rates is not shown simply by evidence of increased costs, especially when the reasonableness of existing rates has not been determined by the commission; rather, it is always necessary to consider the reasonableness of the increased rates. The converse of the general rule also prevails, that rates may be expected to fall with a decline in price, although such decreases are only infrequently accorded voluntarily by the company.

Likewise implicit in the acceptance of the cost standard is the assumption that the utility will be operated and managed with a high degree of efficiency. One of the shortcomings of regulation has been a failure to develop the requisite standards for measuring efficiency in operation and management; but even without clearly recognized standards there have been numerous instances of rate increases denied, or reductions ordered, on the ground that costs were excessive. A failure to keep appropriate accounting records, the absence of accumulated reserves, improvident contracts for the purchase of supplies or services, and available but unrealized economies have all been taken as evidence of a failure to attain satisfactory standards of efficiency. The absence of clearly defined standards of efficiency, however, renders the practical influence of this factor less significant in practice than the theory of rate regulation would indicate.

Value of service. The value of service has been said to constitute the maximum that may be considered reasonable. Rates must be reasonable to all parties, not merely to the utility as measured by the cost of service, but also to the consuming public, as measured by the value of the service. Although this "standard" has been the subject of frequent discussions in the case literature of railroad and utility regulation as a factor bearing on the reasonableness of

³¹ Carried to its logical conclusion, the cost standard may be applied not simply to the operating expenses, including taxes and depreciation, but also to the cost of providing the capital equipment and capital funds with which the service is rendered; so conceived, the "fair return" becomes the cost of providing the capital or investment used in the public service.

the general level of rates, it is more applicable to a consideration of the reasonableness of the charge for a particular service than to the general level of charges. In the early days of railroad development, this concept of value of service passed current as the principle of "charging what the traffic will bear."

The persistence of value of service as a standard for judging the reasonableness of rates dates from its inclusion in the classic pronouncement of the Supreme Court in *Smyth v. Ames*,³² a pronouncement that is still quoted as authority for nearly every decision handed down by either courts or commissions on the question of the reasonableness of utility rates. Thus appearing as the counterpoise to "cost of service," "value of service" has frequently been treated by courts and commissions as constituting an independent measure of the reasonableness of utility rates, the decisions commonly including the statement that rates should not exceed the value of the service rendered.³³

The weaknesses of value of service as an independent measure of the reasonableness of utility rates becomes apparent when the question is asked as to how it may be measured. "Value of service" is not a definite and objective pecuniary sum; it is highly subjective; and it varies from individual to individual and for the same individual from time to time. In particular instances an attempt has been made to give objectiveness to the concept by references to the retention of patronage, the price of substitute service, the charges made by other companies similarly situated, and the ability of consumers to pay as affected by changing price levels and changes in business activity. Incapable of objective measurement, value of service has become less and less significant as methods of cost determination have improved, until at present it is treated chiefly as an exception to the general rule that rates should be sufficient to cover cost of service. In this use, it is primarily a rationalization in the face of adverse circumstances, where no rate, however high, will enable the utility to earn a fair return.

Does value of service have any legitimate place in judging the reasonableness of rates? In the distribution of the total costs of utility service among the various classes of consumers, the absence of complete data showing the costs of serving various classes of consumers may justify the adjustment of the rates to each class of consumers according to the ability of each class to pay—the determination being largely influenced by the availability of substitute services, the bargaining power of the users, and the eagerness of the utility to develop additional patronage. Otherwise this "standard" has been of little significance, since every increase or decrease in rates causes a change in the consumption of the utility service and brings a corresponding change in the value of service to the various users. In the absence of some agreement as to what percentage of the community should enjoy a utility service (for no rate that would enable a utility to survive would be low enough to make utility service uni-

³² "What the company is entitled to ask is a fair return upon the value of that which it employs for the public convenience. On the other hand, what the public is entitled to demand is that no more be exacted from it for the use of a public highway than the services rendered by it are reasonably worth." (169 U.S. 466, 547 [1898].)

³³ *Springfield v. Springfield Gas & Electric Company*, 291 Ill. 209, 216-217, 125 N.E. 891 (1919).

versally available) and how intensely the service should be utilized, there would seem to be no objective index of the value of service.

In only one other respect may a modified form of the value of service standard claim a measure of validity, and in this, it is concerned with the practical significance of the elasticity of demand for the utility service. If an increase in the charges for any utility service results in a reduction in the net income derived from that service, it may appropriately be said that the charge exceeds the value of the service to that body of consumers, and any increase in rates that would produce such an effect would be unjustified even from the company's standpoint. Likewise, where a reduction in existing charges for any class of service would, within a reasonable time, produce an increase in the net income derived from a particular class of service, it may be said that the existing charges exceed the value of the service and should be reduced.

Character of the service. The right to charge rates adequate to cover the full cost of the service is conditional upon the service being adequate both in quantity and quality. A poor standard of service has frequently been the basis for a denial of a request for higher rates, and in a few instances a persistence of a poor quality of service has occasioned an order for a reduction of charges. Rates follow service, not service rates: the utility is under obligation to afford adequate service and, after having provided such service, may request the regulatory authorities to approve charges sufficient to cover the cost of such service.

Comparisons with other utilities. Comparison of the rates for similar service charged by other utilities is a factor that the commissions are frequently called upon to consider in dealing with the question of the reasonableness of rates. Such comparisons are frequently effective in securing voluntary reductions, though usually the defense against such adverse criticism takes the form of elaborate statements designed to show that the comparison is invalid because the conditions are not comparable. A good example of such effective informal pressure from public opinion is afforded by the instances where municipally operated plants have been responsible for utilities charging lower rates in adjacent communities than in communities in other sections of the state.³⁴ Rate comparisons are probably more effective in inaugurating rate investigations than in dictating the conclusions reached. Without exception the regulatory authorities have been insistent that the similarity of conditions must be apparent before any such comparisons may be considered persuasive. The difficulty of establishing similarity in all essential conditions results in such comparisons being largely in the nature of supporting evidence, but where similarity of essential conditions prevails the results of such comparisons may be conclusive. Certainly the charging of rates substantially in excess of those charged by other utilities serving under comparable conditions should impose on the high-rate utility a heavy burden of proof to justify its charges.

Competitive conditions. Competitive conditions may influence decisions as

³⁴ The publication of the *Preliminary Report of Domestic and Residential Rates in Effect January 1, 1935* by the Federal Power Commission was followed by numerous important reductions in the rates of electric utilities that found themselves listed in the higher rate brackets.

to the reasonableness of the general level of rates or of charges for a particular category of service. Most utility companies are protected from direct competition of the same service, and the indirect competition afforded by utilities rendering different services as between electric and gas companies is more likely to influence the policies voluntarily pursued by the utility managements than the decisions of regulatory commissions. In general it may be said that a utility will be permitted to meet competitive rates through voluntary reductions, but that an attempt on the part of consumers to force a utility to establish such competitive rates throughout its territory rarely succeeds.³⁵ One important qualification respecting voluntary rate reductions to meet competitive conditions is found in the universal insistence that the meeting of competition must impose no burden upon the noncompetitive sectors of the utility's market. Where direct competition prevails it is, of course, essential that uniform charges be established for the competing companies; and in such situations the reasonableness of the common rate should be, and usually is, judged with reference to the costs of the more efficient competitor.

Economic conditions. General economic conditions are often urged on commissions as justifying a revision of rates; however, their significance in fixing reasonable rates is difficult to assay. While as a class, utilities are relatively sheltered from the ravages of economic depressions and the unhealthy stimulation of boom periods, all utilities find that general business conditions are reflected in their earnings, and some utilities, as the railroads, find themselves seriously menaced by depressions.

There are three common situations in which commissions may be called upon to consider the effects of changing economic conditions in relation to the reasonableness of utility rates:

(1) During periods of depression, the costs of conducting a utility business usually decrease, but such decrease is usually not sufficient to offset the decline in volume. These declines in net earnings are significant chiefly in the case of those companies having a considerable volume of industrial service, which is subject to sharp contractions with adverse business conditions. Most commissions have wisely insisted that the losses from industrial service may not be shifted to the domestic consumers.

(2) What should be a commission's attitude when consumers request rate reductions during a period of business inactivity? Denials of rate increases have been more frequent than mandatory orders for rate decreases. If the depression is accompanied by a substantial decline in prices, consumers' requests for lower rates may succeed if the commission is convinced that costs have fallen sufficiently to justify a mandatory order; on the other hand, some commissions have gone on record as opposing the proposition that utility rates should rise and fall with fluctuations in the general level of prices.³⁶

Where the policy of the state is to regulate rates on the basis of present fair value with substantial weight accorded to reproduction cost, a logical basis for rate reductions may be found in the decline in the rate base reflecting the

³⁵ *Modesto Irrigation Dist. v. Pacific Gas & Electric Co.*, P.U.R. 1932B, 203 (Cal., 1931); *Re Consumers Power Co.*, 13 P.U.R. (N.S.) 517 (Mich., 1936).

³⁶ *Saugus v. Lynn Gas & E. Co.* 2 P.U.R. (N.S.) 433, 440-441 (Mass., 1934).

lower costs of replacing the existing property. On the other hand, where the commission is committed to the investment basis, there is less occasion for a mandatory reduction in rates, unless there has been a significant decrease in operating expenses.³⁷

(3) Where changing business conditions produce a rise in prices, the initiative rests with the companies. In such a situation an increase in rates may be asked on two grounds: because the rising prices have imposed higher operating expenses on the utility, and because the rising prices have increased the costs of capital reproduction, and hence presumably the present fair value of the utility's property. As an offset to such factors making for rising rates, the increased volume of business that usually accompanies an upward movement of prices may so reduce the overhead charges per unit as to make any increase in rates unnecessary.

The location of the utility. The effect of location and natural environment is sometimes considered where a utility enjoys peculiarly favorable conditions. Thus in the case of electric utilities deriving their power from hydroelectric sources, should the value of the water power be included in the estimate of the cost of the electric energy? The difference between the cost of electric energy generated by hydro-power and the next cheapest source, as steam generation, capitalized at the appropriate rate of interest, has been urged as the value of the water power; but if the value of the water power should be included in the rate base at any such figure, the public would, to that extent, be deprived of any advantage from this cheaper source of supply. Moreover, the "value" so secured would be of doubtful validity, since its magnitude would change with every change in costs by alternate methods and with every revision in the rate of capitalization.³⁸ Similarly, nearness to the source of natural-gas supply has been recognized in prescribing lower gas rates. So far as natural advantages are concerned, it is now generally recognized that the public is entitled to the full benefit thereof, and that the utility is fairly treated if it be given a fair return on the value of its investment. With the consolidation of operating units and the concentration of electric generation in large central plants, the question has been raised whether the consumers located in the same city with the generating stations are entitled to unusually low rates; usually public policy has favored extending to all consumers served by the consolidated company the advantages accruing from centralization and consolidation.

History of the utility. The history of the particular utility may be consid-

³⁷ In the competitive field the pressure for reductions in prices during a depression comes from the attempt on the part of each producer to maintain a reasonable volume of output in a shrinking market; since there is little direct competition among utility corporations, and since most utilities have maintained a reasonable relation between their productive capacity and the demands of their market, there is no such pressure for rate reductions as a means of maintaining volume of business, and consequently the responsibilities of the regulatory body for price adjustments are correspondingly greater.

The appropriate policy for management to pursue belongs properly in a chapter on the marketing of the utility product. It is sufficient to observe here that the possibilities of increasing the volume of profitable business by voluntary rate reductions seems not to have been widely accepted by utility managements.

³⁸ See Chapter XIII, Sec. 5.

ered in resolving the question of what rates are reasonable for it, for clearly a utility managed conservatively and intelligently in the public interest is entitled to more favorable consideration than one which has a different history. The analysis of the history of the utility may pursue several lines: the investment or cost of the property, the engineering and construction standards, the capitalization and cost of its capital, the past rate policy, the adequacy of accounting records, the policy with respect to reserves, the policy with regard to excess profits and dividends, and the record as to operating expenses and salaries. Commissions have given consideration to each of these items. Taken together, these matters are significant in reflecting the general attitude of the management toward the public.

Corporate organization and ownership. In recent years increasing attention has been devoted to corporate organization and ownership when the reasonableness of rates is in question. In the earlier decisions the question of the ownership of the utility properties was generally held to be immaterial, but with the growth of the holding company and the multiplication of intercorporate contracts, the matter has assumed new importance.

Rates formerly in effect. The rates formerly in effect may have some influence on a commission's judgment as to the reasonable rates for the future. Rates voluntarily established are presumably reasonable to the utility, at least so long as the conditions that prevailed at the time of their inauguration persist. But such former rates, while a matter for consideration, are not conclusive, and such rates, even when embodied in contracts, are no obstacle to action by the commission.³⁹

Patrons' wishes. The wishes of the patrons with respect to rate levels or schedules, even when the company and the customers are in agreement, should have little weight in influencing the commission's decision. The average utility customer knows little about the business of the utility or the broader aspects of the public interest. Quite naturally, the absence of opposition to a proposal for an increase in rates enhances the chances that the petition will be granted, but the commission should not translate such lack of opposition into an excuse for foregoing its investigation and reaching an independent conclusion.

MAXIMUM RATES. No specific discussion of the power of commissions to establish maximum rates is necessary; it was for the purpose of setting maximum rates that regulation first developed, and the preceding discussion of the power to regulate was concerned with control over maximum rates.⁴⁰

MINIMUM RATES. The right of the state to regulate minimum prices when such appeared to be the appropriate remedy for a recognized economic ill has been upheld in such broad terms as to place this form of control on a par with the fixation of maximum prices.⁴¹ Three objectives may be sought in minimum rates: to remove discrimination against individual consumers, to control competition between utility corporations, and to prevent a company from undermining its credit through charging unduly low rates.

³⁹ When power consumers have given up independent steam plants and installed electric motors, and where domestic consumers have made extensive investments in gas or electric appliances in reliance upon established rates, these facts will always receive careful consideration by commissions even though they may not be conclusive.

⁴⁰ *Supra*, Sec. 2.

⁴¹ *Nebbia v. New York*, 291 U.S. 502 (1934).

Two quite different situations may call for the fixation of minimum rates to correct undue discrimination in charges. First, undue discrimination may exist where some of the customers of a utility are required to pay a higher rate in proportion to cost than another class of customers; for example, this situation is often presented by the practice of utilities in charging large consumers less than is required to cover their share of the costs. The transportation utilities afford an illustration of a second form of discrimination, where, in order to secure competitive traffic, lower rates are made at competitive points while higher rates are maintained at noncompetitive points. Under these circumstances the establishment of minimum rates for competing carriers may be undertaken to prevent injurious consequences to shippers at noncompetitive points, rather than to control competition among the carriers.⁴² The general power to remove discrimination, and to set minimum rates as the appropriate means of correcting such conditions, has long been recognized.⁴³

To control competition between two like utilities serving the same territory or between two different utilities rendering a competing service has afforded another occasion for the fixing of minimum rates. Since most utilities are protected from the competition of a like service, the first situation is rare, but not unknown. Competition between two natural-gas utilities in Shelby, Montana, presented the dilemma in its most acute form, since it was contended that the patronage was insufficient to permit both utilities to survive. One of the companies carried its appeal to the Supreme Court in an effort to set aside the minimum rates fixed by the commission, only to have the Court uphold the commission, affirming that the company possessed no constitutional right to destroy its competitor by unrestrained price cutting.⁴⁴ A similar situation was presented when a private utility sought to destroy its publicly owned competitor through successive price cutting.⁴⁵ The transportation field presents the most numerous instances of unlike utilities rendering a competing service. State regulation of motor carriers, with the purpose, in part, of preventing them from charging such low rates as would divert an undue amount of freight traffic from the railroads to the highways, has been found constitutional.⁴⁶

The protection of the financial health of the utility company has apparently not been the occasion for the setting of minimum charges by state authorities, but this was the fundamental purpose underlying the amendment to Section 15 of the Interstate Commerce Act in 1920.

RATE SCHEDULES AND STRUCTURES. The commission is responsible not only for the maximum and minimum rates charged by utilities subject to its control, but its jurisdiction extends to all classifications, schedules, and rules and regulations pertaining to charges. The typical state utility law requires all com-

⁴² *Jefferson Island Salt Mining Co. v. U.S.*, 6 F. (2d) 315 (N.D. Ohio, 1925).

⁴³ *Ortega Co. v. Triay*, 260 U.S. 103 (1922).

⁴⁴ *Comm. v. Great Northern Utilities Co.*, 289 U.S. 130 (1933).

⁴⁵ *Mapleton v. Public Service Co.*, 209 Iowa 400, 223 N.W. 476 (1929). The right of the privately owned utility to go below the ordinance rate of 13 cents in order to undercut the rates being charged by a municipal utility was denied; both utilities were required to operate under the 13-cent rate fixed by the ordinance.

⁴⁶ See *Stephenson v. Binford*, 287 U.S. 251 (1932).

panies to file with the commission a schedule of their rates and charges and copies of all rules and regulations pertaining thereto. Changes in schedules may become effective in two ways; if the commission does not notify the company that it intends to undertake an investigation, the schedules become effective at the end of the statutory waiting period, or the commission, after investigation, may give the schedule its formal approval. If for any reason, the commission finds the proposed classification and schedule of rates improper, it may order the company to file a new schedule conforming to its specifications or it may promulgate the new schedule.⁴⁷ The nature of customer classifications and rate schedules, and their regulation are treated in Chapter X.

MAXIMUM-RATE LAWS. In many states, the regulation of utility rates antedates the creation of the commission, the earlier regulation having been accomplished through maximum-rate laws and restrictions contained in the franchises or charters under which the companies operated. With the establishment of the commission, the continuance of maximum-rate statutes became an anachronism at odds with the fundamental principles of flexible control through a commission. The modern tendency is to recognize that the power of the commission to increase rates, even above the level designated in statutes, is the counterpart of the power to require adequate service. Both the immediate and the long-run interests of the community may be more safely entrusted to an alert and able commission than to statutory definitions. In some states, the organic act creating the commission provided for the repeal of all existing statutory regulations of rates or stated that the commission's power to establish just and reasonable rates should be unrestrained by existing laws prescribing rates and charges; in other states, the statutes establishing the commission remained silent as to the status of laws establishing maximum rates. From this latter group of states has come confusing questions as to the power of the commission, to which the courts have returned conflicting answers.

The question whether the existence of maximum-rate laws suspends the commission's power to regulate rates within the limits set by the statute has been answered in the negative. The freedom of the commission to reduce utility charges, notwithstanding that the company's charges are within the statutory maximum, has been affirmed.⁴⁸ And it would seem to be equally clear that the commission's general powers to establish reasonable rates would permit an increase of rates within the statutory limit.

⁴⁷ This, at least, is the scope of the legislature's authority. Thus, in a recent natural-gas case, the Supreme Court stated through Mr. Justice Cardozo: "The appellee argues that the only question for the Commission was one as to the reasonableness of the new schedule in the very form proposed: let the rates be excessive by ever so little, the schedule, it is said, was to be rejected altogether, and no other could be substituted. In opposition the appellant urges that this is too narrow a construction of the function and powers of the Commission under the applicable statute: if the proposed schedule was too high and the earlier one too low, there was a duty to fix a rate between, and thereby make the compensation adequate. We accept this broader view in the absence of a ruling to the contrary by the courts of the state." (*Dayton P. & L. Co. v. Comm.*, 292 U.S. 290, 294 [1934].)

⁴⁸ *Del. & H. Co. v. Public Serv. Comm.*, 140 App. Div. 839, 125 N.Y. Supp. 1000 (N.Y., 1910); *Re Rochester*, P.U.R. 1915A, 1095 (N.Y. 1915); *Public Utilities Comm. v. Chicago & W. T. R. Co.*, 275 Ill. 555, 114 N.E. 325 (1916).

Whether a commission has authority to fix rates higher than the statutory maximum depends upon whether the courts and commissions conclude that the maximum rate statute was repealed by the laws establishing the commission. In a number of states, courts and commissions have interpreted the general power of the commission to establish just and reasonable rates as a repeal by implication of any maximum-rate laws which would operate to impair the commission's jurisdiction.⁴⁹ In other jurisdictions maximum-rate laws have been held to be as still operative.⁵⁰ But a finding by the courts that a statutory rate is confiscatory operates to permit the commission thereafter to establish reasonable rates.⁵¹

The case for permitting commissions to regulate rates without respect to the maxima established by statutes would appear to be a strong one, quite in keeping with modern regulatory trends. Regulations with respect to the safety and adequacy of service are certainly as important as regulations looking toward reductions in rates, and yet the power of the commission to require adequate service may be vetoed by the existence of a maximum-rate law under which the company is unable to earn a reasonable return. The protection of the utility's credit is significant not simply in terms of good standards of service; it is equally essential to securing capital on the most favorable terms.

THE SIGNIFICANCE OF CHARTERS, FRANCHISES, AND CONTRACTS. The effects which charter, franchise, and contract provisions pertaining to utility rates have on the regulatory powers of the state have been considered.⁵²

TEMPORARY RATES.⁵³ The term "temporary rates" is used to describe rates which are filed by the company or fixed by the commission for a limited period of time. The time limit may be definitely stated, or the continuance of the temporary rates may be contingent upon specified future events. The demand for the fixation of temporary rates pending a final determination by the commission of the appropriate volume of earnings and the proper level of charges for the utility company arises out of the delays in regulation incident to the application of the "present fair value" method.⁵⁴ In the attempt to avoid some of the least defensible consequences of these delays, commissions, legislatures, and courts have developed two stop-gap arrangements: (1) the "temporary" rate, and (2) the segregation of revenues collected in excess of the prescribed rates or the filing of a bond by the company, with provision for the repayment to patrons of any charges which are collected over and above those finally established as reasonable.

The case for the temporary rate. The advantages of the temporary rate as

⁴⁹ *Robertson v. Wilmington & P. Traction Co.*, 30 Del. 155, 104 Atl. 839 (1918); *Rhodes v. Comm.*, P.U.R. 1917E, 315 (Mo., 1917); *Re Mo. Southern R. Co.*, P.U.R. 1925A, 748 (Mo., 1924); *Re Elmira Water, L. & R. Co.*, P.U.R. 1925E, 81 (N.Y., 1925); *Re Portland R. L. & P. Co.*, P.U.R. 1918A, 751 (Or., 1917).

⁵⁰ *Re Northern P. R. Co.*, P.U.R. 1920F, 11 (Mont., 1920); *Re Western Passenger Assn.*, P.U.R. 1920F, 715 (Mont., 1920); *Re Railroads*, P.U.R. 1920F, 17 (Neb., 1920).

⁵¹ *Municipal Gas Co. v. Comm.*, 224 N.Y. 156, 120 N.E. 132 (1918); *Morrell v. Brooklyn Borough Gas Co.*, 231 N.Y. 398, 132 N.E. 129 (1921).

⁵² *Supra* Sec. 2. See also Chapter VII.

⁵³ This material first appeared in an extended form under the title "Temporary Rates in Utility Regulation," 34 *Illinois Law Review* 929-955 (April, 1940).

⁵⁴ See Chapter XVI.

compared with the procedure of having the utility refund any rates collected in excess of those fixed by the commission are numerous and significant:

(1) The principal economic advantage lies in the more prompt adjustment of utility charges to changing conditions. In a period of rising costs, delay may lead to a permanent impairment of the utility's capital and credit, and perhaps to receivership and deterioration in service standards. In a period when other prices and costs are falling, the evil consequences of uneconomically high utility rates are not to be measured by the overcharge to consumers, nor are they to be recompensed by the refund of the excess collected above the just and reasonable rates.⁵⁵

(2) If the commission is permitted to establish a temporary rate, either higher or lower than that in effect, pending its final determination of the company's revenue requirements, it will have the benefit of actual experience with the prospective new rate when it finally establishes the rates which will thereafter prevail.

(3) The temporary rate possesses significant advantages over the alternative of requiring the company to refund any excess collected under a court order suspending commission-prescribed rates. The refund of the excess to consumers is no restitution for the damages which have been inflicted upon the community at large. The refund method imposes heavy costs upon the utility, or the commission, in distributing the refunds.⁵⁶ Furthermore, a substantial portion of all refunds which are ordered are never paid because those entitled to receive them cannot be located.⁵⁷ Also it seems reasonable to think that the use of the temporary rate would be more favorable to a prompt settlement of rate cases than the alternative arrangement of having the company post a bond to refund any excess collected.

(4) It may not be argued that the use of the temporary rate is prejudicial to the interests of the utility if the commission is required to consider any deficiency in earnings under the temporary rates when permanent rates are finally established.

(5) It has been declared that the use of the temporary rate will result in discrimination against those who constitute the body of consumers at differ-

⁵⁵ The higher rates will have had a deterrent effect upon the demand for the utility service, with a consequent decline in employment in the utility industry (or employment will be held to a lower level than would otherwise prevail), and with a decline (or curtailment) of utility earnings to the disadvantage of utility investors. Further, the decline in the demand for the utility service, or even the failure of utility demand to continue to expand, will lead to a decline in the demand of the utility corporations for capital equipment, commodities, and services. On the other side of the market, those businesses which purchase the utility service find that their costs are held at unwarranted levels. Of course these consequences are operative in the former situation directly in proportion to the importance of the utility market to other related industries. Since depressions tend to be cumulative, the indirect consequences of excessive prices for an industrially important product or service may be some astronomical multiple of the excessive charge.

See Sumner, "Public Utility Prices and the Business Cycle," 21 *Rev. Econ. Statistics* 97 (1939).

⁵⁶ Extensive bookkeeping records have to be maintained to record the sums paid by each customer, and large clerical staffs are needed to calculate the payment due to each customer and to prepare and mail the checks. For example, the Illinois Bell Telephone Company incurred an expense of \$2,575,412.89 to distribute \$16,900,000 of the total of \$19,000,000 which it had collected in excess of the commission-prescribed rates finally sustained by the Supreme Court.

⁵⁷ See Simpson, "Public Utility Refunds: A Study of Regulatory Ineffectiveness," 15 *Journal of Land & Public Utility Economics* 12 (Feb., 1939), and "Two Recent Utility Cases Involving Refunds," *ibid.*, 238 (May, 1939).

ent periods of time; that through the temporary rate, present consumers may be given the benefit of unduly low rates at the expense of later consumers who are subject to the higher charges that may be necessary to make up any deficiency which the company has sustained. The theoretical validity of this argument may be admitted, but it is suggested that its practical importance can be greatly exaggerated.

The use of the temporary rate by commissions. Commissions have used the temporary rate to meet three quite distinct situations. Temporary rates may be established to meet emergency conditions and may be continued in force for a designated period of time or until the termination of the emergency. Temporary rates may be established in order to test by actual experience what earnings may be expected, and whether the temporary rates should be made permanent. And, thirdly, temporary rates may be ordered to correct existing unreasonable charges where serious injustices would arise if those charges were left unchanged pending a full investigation and a final determination of the just and reasonable rates.

(1) The power to prescribe temporary rates to meet emergency conditions need not rest upon any specifically labeled statutory provision, but may be implied from a commission's general jurisdiction over utility rates and charges. However, the occasional necessity for giving immediate effect to changes proposed by utility companies is usually recognized by authorizing the commission to permit new schedules of rates and charges to become effective immediately, if the public interest justifies, without waiting the usual statutory period.⁵⁸

What have been the occasions for ordering emergency increases in rates? What evidence has sufficed to justify emergency increases? By far the commonest background for the demand for emergency increases is to be found in rising costs of operation, and the specific evidence has concerned rising prices, inadequate service, operating losses, earnings below the level of a fair return, and the threat of discontinuation of an essential service.

Commissions have usually been insistent that the emergency must be real and substantial, and that the company's position must be actually threatened thereby, before it becomes appropriate for emergency increases in rates to be awarded.⁵⁹ Clearly, the utmost practical economy should be a prerequisite to any emergency relief in the form of rate increases, but, unfortunately for consumers, the dependence of the public upon the services rendered by utility en-

⁵⁸ Some state legislatures have specifically provided for the issuance of emergency orders by some such provision as that found in the Wisconsin public utility law—"The commission may by order when deemed by it necessary to prevent injury to the business or interests of the people or any public utility in case of any emergency to be judged of by the commission, temporarily alter, amend, or with the consent of the public utility concerned, suspend any existing rates, schedules and order relating to or affecting any public utility or part of any public utility." (*Wisconsin Statutes*, 1937, C. 196, Sec. 70.)

That the commission's power to issue temporary or emergency orders is not confined to emergency situations is indicated by another section of the same Wisconsin law, that the "Commission is empowered to issue conditional, temporary, emergency and supplemental orders." (*Wisconsin Statutes*, 1937, C. 196, Sec. 395.)

⁵⁹ *Re Milwaukee Elec. R. & L. Co.*, P.U.R. 1917C, 97 (Wis., 1917) *Re So. Cal. Edison Co.*, P.U.R. 1925C, 235 (Cal., 1924); *Re Wis. Tel. Co.*, 20 P.U.R. (N.S.) 177 (Wis., 1937).

terprises has not made it possible for commissions always to deny emergency relief where managerial errors and lack of efficiency have prevailed.⁶⁰

Emergency reductions in utility charges have been less frequent than emergency increases, and have come chiefly as a result of unusually severe economic depression. In many instances, these reductions have been offered voluntarily by utility managements, usually as a means of retaining patronage.⁶¹ In general, either a decline in the costs of doing business or the earning of an excessive return is sufficient to support a commission order for an emergency reduction in rates.

The procedure in handling petitions for emergency changes in utility rates has been developed largely by the commissions, with certain admonitions from the courts. If the adjustment of rates and charges to emergency conditions is to be effective in protecting the interests of utility and consumers, promptness is requisite; hence, it is essential that the commission itself be made the judge of when emergency conditions exist.⁶² However, it is reasonable to require of the commission, as the commission should require of the utility, that the emergency order be supported by evidence that an emergency exists and that there be evidence to support the particular change in rates contemplated. While they have not been insistent upon that fullness of proof which is required in normal petitions for higher utility rates, commissions have commonly placed upon the companies the burden of establishing clearly the appropriateness of extending emergency relief.⁶³ In cases looking to emergency reductions for the benefit of the public, the commissions themselves have undertaken the obligation of assembling evidence of the emergency and of the propriety of the reduction.

Emergency readjustments of rates are usually made without disturbing the existing allocation of costs among the different classes of consumers of the service, unless there be competitive charges that cannot be increased.⁶⁴ In some instances, however, an attempt has been made to have the emergency reduction accrue largely to the benefit of those consumers who are paying the higher charges for service.⁶⁵

The criteria of a satisfactory return for an emergency period have depended upon the nature of the emergency. In some instances an attempt has been made to preserve to the companies a fair return upon the property or invest-

⁶⁰ *Re Veedersburg*, P.U.R. 1918C, 499 (Ind., 1918); *Columbia v. Watts Engineering Co.*, P.U.R. 1918D, 157 (Mo., 1918); *Re Indianapolis Water Co.*, P.U.R. 1919A, 448, 476-479 (Ind., 1918); *Re Indianapolis Traction & T. Co.*, P.U.R. 1919B, 152, 167-173 (Ind., 1918).

⁶¹ *Re Prescott Waterworks Utility*, P.U.R. 1932D, 403 (Wis., 1932); *Re Evansville Municipal Elec. Dept.*, 2 Wis. P.S.C. 477 (1932); *Re Marshfield W. & P. Co.*, 2 Wis. P.S.C. 649 (1932); *Re Richland Center Municipal L. & W. Utility*, 2 Wis. P.S.C. 698 (1932).

⁶² Thus, one must disagree with the dicta of the New York Supreme Court, Appellate Division, that "Emergencies may be declared by the legislature but not by its delegate." (*N.Y. Edison Co. v. Maltbie*, 244 App. Div. 436, 442, 279 N.Y. Supp. 949, 956 [1935].)

⁶³ *Re Milwaukee E. R. & L. Co.*, P.U.R. 1918A, 798 (Wis., 1917); *Re Queens Borough G. & E. Co.*, P.U.R. 1918F, 872 (N.Y., 1918); *Re Tri-State Teleph. & Teleg. Co.*, P.U.R. 1919C, 5 (Minn., 1918); *Re Hammond, W. & E. C. R. Co.*, P.U.R. 1920E, 517 (Ind., 1920).

⁶⁴ *Re E. St. Louis L. & P. Co.*, 6 Ann. Rep. Ill. P.U.C. 129 (1918); *Re Central Ill. L. Co.*, P.U.R. 1918F, 102 (Ill., 1918); *Re Indianapolis Traction & T. Co.*, P.U.R. 1919A, 278 (Ind., 1918).

⁶⁵ *Public Utility Comm. v. Edison L. & P. Co.*, 19 P.U.R. (N.S.) 474 (Pa., 1937).

ment with which they are serving the public.⁶⁶ More frequently, however, commissions have recognized the unwisdom of attempting too radical increases in charges, noting that during an emergency lower returns may be approved than would be considered appropriate in normal times.⁶⁷

(2) The use of the trial or test rate by commissions presents relatively few problems for discussion. Trial rates have commonly arisen from uncertainties concerning the revenue that may be expected from a given schedule of charges,⁶⁸ although this device is equally appropriate when the revenue requirements of the company are uncertain,⁶⁹ or where general economic conditions are abnormal or transitory.⁷⁰

In view of its obvious advantages, it is surprising that commissions have not made more frequent use of the trial rate. Its relative neglect and disuse may probably be explained by the fact that commissions are at liberty to reopen cases whenever changes in the revenues or expenses of the companies render such action appropriate.

(3) The commissions' use of the temporary rate to correct unreasonable rates pending a final determination of the just and reasonable rate on full investigation does not necessarily rest upon any definite statutory grant of power.⁷¹

In 1923 an adverse decision of the Supreme Court in a New York case involving a temporary order reducing rates caused the temporary rate to fall into disuse. The Court's language, which served many years as a precedent for state and federal courts and which dictated the language of the statutory revisions which several states passed in the early nineteen thirties, warrants quotation:

"Nor did the fact that the orders of the Commission merely prescribed temporary rates, to be effective until its final determination, deprive the Company of its right to relief at the hands of the court. The orders required the new reduced rates to be put into effect on a given date. They were final legislative acts as to the period during which they should remain in effect pending the final determination; and if the rates prescribed were confiscatory, the Company would be deprived of a reasonable return upon its property during such period, without remedy, unless their enforcement should be enjoined. Upon a showing that such reduced rates were confiscatory, the Company was entitled to have their enforcement enjoined pending the continuance and completion of the rate-making process. . . . If the Commission, however, fixed an early

⁶⁶ *Re Georgia R. & P. Co.*, P.U.R. 1918F, 624 (Ga., 1918).

⁶⁷ *Re Trenton & M. County Traction Corp.*, 6 N.J.P.U.C.R. 453 (1918); *Re Kenilworth Water Co.*, P.U.R. 1921D, 95 (Ill., 1921).

⁶⁸ *Re Chicago & W. T. R. Co.*, P.U.R. 1919A, 268 (Ill., 1918); *Re Bay State St. R. Co.*, P.U.R. 1919A, 817 (Mass., 1918); *Re Denman*, P.U.R. 1928C, 672 (Ida., 1928); *Re Cities Service Co.*, P.U.R. 1933A, 113 (Kan., 1932).

⁶⁹ *Re Baltimore County W. & E. Co.*, P.U.R. 1918F, 522 (Md., 1918); *Re Teton Valley P. & Milling Co.*, P.U.R. 1932B, 267 (Ida., 1931).

⁷⁰ *Re United R. & E. Co.*, P.U.R. 1919C, 74 (Md., 1919); *Re Illinois L. & T. Co.*, P.U.R. 1921B, 549 (Ill., 1920).

⁷¹ It is noteworthy that earlier statutes associated the use of the temporary rate with an emergency and exhibited a somewhat greater concern for the welfare of the company than for that of its patrons. The latter characteristic is evident in the contemporary New York statute, first enacted in 1920. (*Laws 1920*, c. 542, Sec. 2; *Laws 1934*, c. 212, Sec. 5.)

date for the final hearing, this might have been taken into consideration by the court as an element effecting the exercise of its discretion in the matter of granting an interlocutory injunction. . . . But in the present case, the Commission was still continuing indefinitely its general investigation, and had not fixed any date for the final hearing."⁷²

The elements in the situation leading the Court to its decision are apparent. The company, to the satisfaction of the lower court, had sustained the burden of demonstrating that the effect of the rates was confiscatory. Since the Commission had set no limit to the time required for the completion of its investigation (an impossibility in rate cases), there was no assurance that the "confiscation" would not continue for a period so prolonged as to be unfair to the company. Finally, the Court was of the opinion that it was possible to protect both the company by the injunction and the consumers by the provisions for a refund of any excesses collected by the company.

The grave economic crisis of 1929 and the subsequent depression created insistent demands for prompt rate reductions which could never be timely so long as the "fair value" procedure was observed. Attempts to secure immediate temporary reductions encountered the displeasure of the courts.⁷³ As a result, many state legislatures, following the lead of Wisconsin in 1931,⁷⁴ conferred upon their commissions the power to establish temporary rates, and at the same time sought to prescribe a procedure which would avoid the objections of the temporary rates set forth by the Supreme Court in the *Prendergast* case.⁷⁵

The legal validity of temporary rates. There are still many legal doubts associated with the use of temporary rates. In general, the state courts have upheld their commissions in the establishment of such rates, but the decisions of the federal courts have been less explicit than could be desired.

(1) The authority of the commissions to deal with emergency situations

⁷² *Prendergast v. New York Tel. Co.*, 262 U.S. 43, 49-50 (1923).

⁷³ *Indiana Gen. Serv. Co. v. McCardle*, 1 F. Supp. 113 (S.D. Ind., 1932); *Rockland L. & P. Co. v. Maltbie*, 241 App. Div. 122, 271 N.Y. Supp. 858 (1934); *N.Y. Edison Co. v. Maltbie*, 244 App. Div. 436, 279 N.Y. Supp. 949 (1935).

⁷⁴ Wisconsin, *Laws of 1931*, C. 183, Sec. 3; *Statutes*, 1937, C. 196, Sec. 395.

⁷⁵ Though these statutes differ in significant details, that of New York is probably the most satisfactory and workable that has appeared:

"To facilitate prompt action by the Commission in proceedings involving the reasonableness of the rates of any public utility and to avoid delay . . . , the Commission is hereby authorized to require any public utility company to maintain continuing property records, and to keep its books in such a manner as to show currently the original cost of said physical property and the reserves accumulated. . . .

"The Commission may in any such proceeding, brought either on its own motion or upon complaint, upon notice and after hearing, if it be of opinion that the public interest so requires, immediately fix temporary rates to be charged by said utility company pending the final determination of said rate proceeding. Said temporary rates . . . shall be sufficient to provide a return of not less than 5 per centum upon the original cost, less accrued depreciation, of the physical property, and if the duly verified reports do not show the original cost, less accrued depreciation, the Commission may estimate said cost less depreciation.

"Temporary rates so fixed, . . . shall be effective until the rates to be charged shall finally have been prescribed. The Commission is hereby authorized in any proceeding in which temporary rates are fixed, to consider the effect of such rates in prescribing rates to be thereafter charged and collected by said public utility company on final determination of the rate proceeding." (New York, *Laws 1934*, C. 287; *Thompson's Laws of New York*, 1939, Public Service Law, Sec. 114.)

by rate changes has been uniformly recognized by the courts, even in the presence of franchise and contractual provisions which purported to establish rates.⁷⁶

(2) The appropriateness of trial or test rates when the commission is uncertain of the response of consumers to a particular schedule of charges has been specifically upheld by the Supreme Court.⁷⁷

(3) The validity *per se* of the temporary rate pending a final determination of the just and reasonable rate has not been denied, not even in the unfavorable *Prendergast* decision.⁷⁸ While in the critical *New England Divisions* case,⁷⁹ involving the power of the Interstate Commerce Commission to regulate the divisions of joint rates, and in its most recent pronouncement upon the subject, *Driscoll v. Edison Light and Power Company*,⁸⁰ the Supreme Court clearly recognized that the temporary rate pending a final determination of the just and reasonable rate is constitutionally unobjectionable. Such constitutional doubts as remain unresolved, and they are serious, are concerned with the procedure and the standards by which the temporary rate is established. From the Court's dicta on the subject it appears that three attributes are necessary to assure that the temporary rate order shall pass the constitutional hurdle: there must be evidence to support the commission's order, the procedure must observe the amenities of "due process," and there must be some device to protect the company from any errors of the commission in establishing rates insufficient to afford a nonconfiscatory return.

The fullest discussion of the principles of temporary rates is afforded by the decision of the New York Court of Appeals in *Bronx Gas & Electric Company v. Maltbie* which was concerned with validity of the New York amendment of 1934.⁸¹ It upheld the temporary rates on three grounds: (1) The Commission's order was based upon evidence as to the original cost of the property and permitted a return in excess of 5 per cent thereon. (2) The temporary rates fixed by the Commission were not final rates even for the period during which they were to be in effect, since the statute required the Commission to take into consideration the earnings of the company under these rates in designating the permanent rates. (3) And, finally, full provision was made to protect the company from any confiscatory effects of erroneously low temporary rates by providing that the public should make good to the company the loss which might be sustained in temporarily charging too little for its service.⁸²

A program for temporary rate orders. The essentials of a constructive pro-

⁷⁶ *O'Brien v. Bd. of Pub. Utility Comrs.*, 92 N.J.L. 587, 106 Atl. 414 (1919); *Omaha & C. B. St. R. Co. v. State R. Comm.*, 103 Neb. 695, 173 N.W. 690 (1919); *La Crosse v. Railroad Comm.*, 172 Wis. 233, 178 N.W. 867 (1920); *Okla. G. & E. Co., v. State Corp. Comm.*, 83 Okla. 281, 201 Pac. 505 (1921); *Elliott v. Empire Nat. Gas Co.*, 123 Kan. 558, 256 Pac. 114 (1927).

⁷⁷ *Clark's Ferry Bridge Co. v. Pub. Serv. Comm.*, 291 U.S. 227, 241 (1934).

⁷⁸ 262 U.S. 43.

⁷⁹ *The New England Divisions Case*, 261 U.S. 184, 199-201 (1923).

⁸⁰ 307 U.S. 104 (1939).

⁸¹ 271 N.Y. 364 (1936).

⁸² The later discussion of the issues raised by the use of temporary rates comes from the Supreme Court of Wisconsin, in *Wisconsin Tel. Co. v. Comm.*, 232 Wis. 274, 287 N.W. 122 (1939). See also Glaeser, "The Wisconsin Telephone Case," 16 *Jour. of Land & Public Utility Economics* 37 (1940).

gram for temporary rate orders are readily apparent from the foregoing analysis. The methods adopted must be sufficiently direct and expeditious to meet the requirements of emergency conditions. The amenities of due process must be observed if the procedure is to be acceptable to the courts. And finally, the results of temporary rate orders must, in the long run, be fair to both the utility companies and the consuming public. With these criteria in mind, the discussion may concentrate on three aspects of the temporary rate order: the procedure, the rate of return and base for the establishment of the temporary rates, and the provisions for protecting the utility from any errors of overzealous regulation.

(1) The first procedural requirement is that of complying with the basic attributes of the due process: the evidence upon which the commission acts must be presented; opportunity must be given to the company to refute such evidence as is presented on behalf of the public and to introduce relevant evidence on its own behalf; and the commission's decision must be supported by the evidence.⁸³

(2) The basis for the determination of the fair return and the measure of the appropriate percentage of return are two of the most crucial matters in the effective functioning of temporary rate orders. Upon the ease and certainty with which these factors can be determined depends the effectiveness of the temporary rate in the presence of rapidly changing economic conditions. Upon the fairness with which the respective interests of patrons and company, especially the latter, are treated depends the attitude of the courts in enforcing or enjoining temporary rate orders.

The statutes are divided in their treatment of the appropriate rate of return. The New York and Pennsylvania statutes set bounds to the discretion of the commission by specifying that the temporary rates shall yield at least 5 per cent upon the depreciated original cost of the property. The Illinois law authorizes the commission to prescribe temporary reductions in rates only when the utility's net income "is in excess of the amount required for a reasonable return upon the value of said public utility property,"⁸⁴ and the reduction is limited to the amount of net income in excess of that reasonable return. Under such limitations, the temporary rate device can never be used to give emergency relief to patrons; it is only a means of preventing the utility from taking advantage of the delays of regulation to continue the exaction of more than its legal right from its customers. Of a different character is the Wisconsin law, which leaves the matter of the rate of return entirely to the commission's discretion. A reasonable confidence in the competence and disinterestedness of the regulatory commission would lead one to support this more flexible arrangement despite the disfavor of the courts.

Many possible bases might be suggested to measure, for purposes of temporary rate orders, the property upon which a utility should be permitted to earn a return. (i) In view of the predilection of the courts, the availability

⁸³ The requirement that a full hearing be accorded prior to the entry of the temporary order does not impose upon the commission the necessity of making an exhaustive investigation into all aspects of the problem. (*The New England Divisions Case*, 261 U.S. 184, 200, 201 [1923].)

⁸⁴ Smith-Hurd, *Illinois Annotated Statutes*, C. 111½, Sec. 36.

of "fair value" for this purpose might be considered, but the costly, time-consuming, and controversial nature of the typical fair-value determination renders this method quite unacceptable for temporary rate proceedings.

(ii) It has been suggested that the present-value figures prepared in earlier valuations may be adapted to changing price levels through index-number adjustments. The acceptability of such adjustments to the federal courts is a matter of doubt; in two cases the Supreme Court has given its implied approval to such use of price indices in what were "final" determinations,⁸⁵ while in a more recent case, adjustment of values by price indices was explicitly condemned.⁸⁶ Even if the use of index numbers should receive judicial approval, there would be two possible objections to this method. It would, obviously, be available only where the fair value of the particular utility company had previously been determined, and where accurate accounting records revealed subsequent capital changes. The second objection concerns the availability of accurate index numbers; the proper index numbers should be immediately available if this method is to be successful, for the preparation of acceptable index numbers is a difficult and extensive task in itself.

(iii) The use of the original cost of physical properties less accrued depreciation is the base prescribed in the New York and Pennsylvania statutes. The original cost of properties to those who first devoted them to utility service is the basis of the uniform system of accounts adopted by the federal regulatory commissions, and this principle has also been adopted by a majority of the state regulatory bodies. The use of this accounting procedure has had the approval of the Supreme Court,⁸⁷ and where such figures are not now available it is reasonable to assume that they will be available in the near future. The patent advantages of this base—a definite sum, capable of ready ascertainment and not subject to extensive controversy—make it entirely acceptable from the administrative standpoint. From the economic point of view it is likely that where the utility is not overcapitalized, the original cost base will satisfy the utility's legitimate requirements for income. The legal aspects of the use of original cost are not clear, since the majority of the Supreme Court sidestepped the issue in *Driscoll v. Edison Light & Power Company*; however, the New York Court of Appeals had no difficulty in sustaining this feature of the New York statute and its decision was cited with approval by two members of the Supreme Court.⁸⁸ At the present time, original cost seems to be the only completely satisfactory basis for the establishment of temporary rates.

The temporary-rate principle could be given another application. It may be recognized that the utilities are not entitled to a reasonable return in every accounting period; rather, the utility's constitutional right may be to have a fair *average* return; thus it would become possible for the excess earnings of some periods to offset the inadequate earnings of other periods, even when those inadequate earnings are the result of temporary rate orders.

⁸⁵ *Clark's Ferry Bridge Co. v. Pub. Serv. Comm.*, 291 U.S. 227, 236 (1934); *St. Louis & O'Fallon Ry. Co. v. U.S.*, 279 U.S. 461 (1929).

⁸⁶ *West v. Chesapeake & Potomac Tel. Co.*, 295 U.S. 662 (1935).

⁸⁷ *Am. Tel. & Tel. Co. v. U.S.*, 299 U.S. 232 (1936).

⁸⁸ Mr. Justice Black and Mr. Justice Frankfurter.

It may be appropriate to recall that rate adjustments, to correspond with changes in the operating expenses, may be made promptly without disturbing the existing fair return and without recourse to any elaborate procedure. Inasmuch as most utility companies have operating ratios approximating 50 per cent or more, the opportunities for rate reductions from this source may be substantial in periods of falling prices; and conversely, substantial rate increases may have to be given in periods of rising prices.

(3) The so-called recoupment provisions of the statutes are presumably decisive in protecting the temporary rate procedure from successful attack on constitutional grounds. Their purpose is twofold: economically, they are intended to protect the utility from any impairment of credit or capital due to the temporary imposition of rates insufficient to afford a fair return; legally, they are intended to prevent the temporary rate from being "final" in the objectionable sense in which the Supreme Court found the temporary rate final in the *Prendergast* case. In essence, the recoupment provision requires that, if the temporary rates prescribed should prove too low to give a fair return, the commission shall, in establishing final and permanent rates, make it possible for the utility not only to earn a fair return, but also to make up any deficiency incurred under the temporary rates. The method by which any deficiency shall be made up may well be left to the commission's discretion: whether by setting the permanent rate higher than would otherwise be justified or permitting a temporary surcharge above what would otherwise be the appropriate charge, by amortizing the deficiency in a short period of time or over several years, or by imposing the cost of the recoupment on all classes of consumers or on only a portion of the patrons.

The measure of the amount which the utility should be permitted to recover is, or should be, the amount by which its income during the period of the temporary rate was less than the requisite fair return.

PROCEDURE IN RATE CASES. No aspect of rate regulation has been the target for more criticism than the procedure which is followed by courts and commissions in their control of utility rates. The problems of judicial review have already been canvassed.⁸⁰ Since the intricacies of the procedural problems cannot be fully understood and appraised until the details of rate regulation according to the *Smyth v. Ames* present-fair-value method have been presented,⁹⁰ the present section will seek the limited goal of describing the procedure of the commission only in so far as some comprehension of procedure is necessary to pursue intelligently the discussion of rate regulation which follows.

Formal and informal procedures. The description of the organization and functioning of the commission has already called attention to the two distinct procedures which are employed in regulation.⁹¹ The formal procedure goes through the succession of complaint, answer, hearings, findings of fact, and an order, while the informal procedure relies on the conference method. In rate cases, no less than in other regulatory problems, a large proportion of all

⁸⁰ Chapter VI.

⁹⁰ Chapters XI to XVI.

⁹¹ Chapter VI.

controversies tends to be settled through the informal procedure;⁹² although where the interests of patrons and company are sharply opposed, as they usually are in important rate cases, the informal method may not be available since it cannot lead to a mandatory order by the commission. The remainder of the discussion of this section relates to the formal procedure unless the contrary is specifically noted.

Statutory provisions and commission rules. The commission's procedure is governed by statutory terms. Within very broad limits the legislature is free to determine the methods and procedures which the commission shall follow, and in general outline, the statutes specify what formalities shall be observed. The specific application of the statutory directions is left to the discretion of the commission, and in its rules of practice and procedure the commission outlines in detail the manner in which cases shall be conducted, the evidence which shall be submitted, the forms on which reports shall be prepared, the conduct of hearings and investigations, the parties that will normally be admitted to its proceedings, and the preparation of briefs and of the protests or objections to the commission's findings or rulings.

In all rate cases, the primary data upon which the commission must base its determination are usually in the sole possession of the company, and it is, of course, essential to assure the complete co-operation of the company and the full disclosure of all data bearing in any way upon the matter under investigation. It is therefore quite appropriate that the statutes should place upon the company the burden of proof in all rate cases—to justify the reasonableness of existing charges if they are called in question, or to demonstrate the propriety of increased rates if such are sought. Once the commission has reached its determination in a rate case, the burden of proof presumably shifts to any party challenging the commission's conclusions.

The posted rate. Common to all rate statutes is the requirement that the utility shall file with the commission and post publicly at its places of business copies of all schedules of charges under which service is rendered. The schedules contain not simply the formal notation of the amount of the charge for the service, based upon service classifications which are subject to commission supervision, but also all practices and regulations which affect rates and charges. The company must adhere scrupulously to the schedule rates, whether fixed voluntarily by the company or prescribed by commission order, charging neither more nor less than the sums specified. The primary reason for the latter requirement is to prevent discrimination between patrons.

Changes in rates on company initiative. Primary responsibility for the rates and charges of the utility rests with the management. The statutes explicitly require that all charges shall be just and reasonable, and all unjust, unreasonable, unduly preferential, or unduly discriminatory charges are prohibited. If the charges are higher than is just and reasonable, it is the duty of the company to file a schedule reducing its rates. Conversely, if the rates are

⁹² See Sharfman, *The Interstate Commerce Commission*, Vol. III-A, pp. 8-9. From 1902 to 1933, the Interstate Commerce Commission handled from four to ten times as many rate complaints through the informal procedure as were handled through the formal procedure.

insufficient, it is to be expected that the initiative in securing more adequate charges will be taken by the management.

The customary procedure in changing rates, when the initiative comes from the company, is for the company to file with the commission a schedule of the new rates proposed to be charged. Notices of the impending change must be given to consumers, normally by the publication of advertisements in newspapers circulating in the territory served. Unless specifically authorized by the commission, on the basis of a finding of an emergency or a necessity from the standpoint of the public interest, increased rates may not become effective until the expiration of a waiting period, which varies from ten to thirty days in different states. It is the purpose of the waiting period to permit the filing of protests, to afford the commission an opportunity to investigate the propriety of the proposed rates, and to permit any patrons so desiring to discontinue their service before the higher rates become effective. Some statutes require the same waiting period both for increases and decreases in rates, while others permit reductions to become effective immediately.

Two different practices prevail as to the circumstances under which new utility rates become effective. In some states, the new rates become effective automatically at the expiration of the statutory waiting period unless the commission has acted to suspend the proposed schedule. In other states, the new rates may become effective only with the affirmative approval of the commission, the commission being required either to approve the proposed schedule within the statutory period or to begin an investigation to determine the reasonableness of the new rates. While either procedure would be satisfactory with an alert commission, there is some advantage attaching to the latter arrangement, since an overworked or understaffed commission might find new rates becoming effective in the absence of an investigation, and since there is wisdom in specifically imposing upon the regulatory body the obligation to inform itself of the reasonableness of any proposed change in rates.

Whenever a new schedule is filed, the commission should have the authority, either upon complaint or on its own initiative, to undertake an investigation into the reasonableness of the proposed rates. In order that the commission may have an opportunity to complete its investigation before the new rates become operative, it is customary for the statutes to provide that the commission may suspend the new schedule of rates pending an investigation into their propriety. In order to safeguard the utility against any undue delay on the part of the commission, the period during which rate changes may be suspended is restricted by the statute, four to five months being common limits for suspension. If the commission is unable to arrive at a decision within that period, the new schedule of rates may become effective without the commission's approval; however, the commission may order the withdrawal or modification of the new rates on completing its investigation. As a further protection to consumers, the statutes require the utility that would give effect to a change in rates before the completion of the commission's investigation to impound all funds collected in excess of the old rates, in order that refunds may be paid to patrons if the commission finally rejects the new rates.

Changes in rates by commission order. Most utility statutes provide that the

commission must undertake an investigation into the reasonableness of any rate or charge when it receives a complaint signed by designated state or municipal officials or when signed by a specified number of patrons, sometimes twenty-five. The better laws also provide that the commission may begin a rate case on its own initiative without awaiting any formal complaint.

Concluding observations. Certain general observations may serve further to characterize the procedure of the regulatory commission in the typical rate case. It should be recognized that there is no precisely defined procedure; the methods of the particular commission are conditioned by the adequacy of its budget and staff and by the competence of the commissioners. The commission's procedure in rate cases is intimately related to other phases of regulation: the commission that has long exercised effective control over the utilities' accounts and security issues may adopt a quite definite procedure for the disposal of rate cases where a comparable procedure would be impossible for another regulatory body; where the courts of the state have interpreted the utility statutes in ways that are restrictive of the commission's discretion, the procedure in rate cases may be largely influenced by the possibility that any findings and order will have to overcome the hurdles of judicial review.

While admitting that it is impossible to confine rate cases to rigidly prescribed procedures, it is still the critic's function to call attention to the prevalence of cumbersome and dilatory methods, growing out of futile and half-hearted attempts of administrative agencies to follow what are essentially judicial patterns of behavior. Statutory revisions could do much to render the commissions' procedures in rate cases more direct and simple; control over security issues and related activities, the requirement of commission approval of extensions and improvements, and the provision that all companies shall maintain continuing property records, are a few of the changes that would render the procedure of rate regulation more satisfactory. More liberal appropriations to assure adequate staffs are essential.

4. ALTERNATIVE POLICIES RESPECTING UTILITY CHARGES

In the regulation of utility charges, no less than in other endeavors where the customary and habitual tends to be regarded as the sole method of procedure, the opinion is widely accepted that only one, or at most, two alternatives are possible. It may serve to heighten critical prospectives if brief consideration be given to the different possible approaches to the regulation of utilities and their rates.

AVOIDANCE OF DISCRIMINATION. Public interest in utilities might be confined to the avoidance, or elimination, of discrimination in the charges made by such corporations. Under this policy, there would be no concern as to the level of the company's charges but only as to any "unfairness" in its dealings as between its customers. The utility would be free, as is any business in unregulated fields, to make the maximum possible profit. This policy might or might not be combined with a policy of preserving and encouraging competition between corporations rendering a like service. The inadequacies of such a "regulatory" program are obvious.

COMPETITION. Public policy with respect to utility rates might center on the encouragement and preservation of competition. This policy would have many disadvantages for both the public and the investors. Utility corporations are examples *par excellence* of businesses operating under conditions of decreasing costs. The large investment in fixed capital commonly results in so much idle capacity, except at the time of the peak load, that additional business can be accepted without the imposition of proportional increments of cost upon the company. The presence of two such companies in the same community, assuming no agreement with respect to the division of the business, would certainly lead to the appearance of cutthroat competition, which would be characterized by an effort to take business from the rival, even though the solicitation of such business should force the adoption of rates insufficient to cover costs. Even if the competition between the rival utilities should not be of the cutthroat variety, it would still be to the disadvantage of the community to have service supplied by two companies. If rates should be charged just sufficient to cover the costs to each company, such rates would be higher than those necessary for a single company, since there would inevitably be a considerable duplication of expenditure in parallel systems of distribution facilities, in the use of smaller and less efficient generating units, in the duplication of reserve capacity, and in the larger combined expenses for technical, administrative, and clerical staffs. But aside from higher costs, the service rendered by two competing utilities would generally be inferior to that supplied by a single company. Competition does not afford a satisfactory solution for the relations between consumers and corporations supplying modern utility services.

In recent years competition in another form has been frequently discussed as a possible means of inducing private companies to lower their charges voluntarily. Instead of the duplication of investment and service, this form of competition looks to the example afforded by publicly owned plants in leading the way to lower rates. Thus it has been found that the proximity of a publicly owned and operated plant, even though it does not seek to invade the territory of neighboring companies, may induce the private plant to seek to emulate its performance in offering rate reductions.⁹³ Experience with this "competition in achievement" may justify a decision favorable to the establishment of additional public plants, but unless universal public ownership is in prospect, it affords no complete solution to the problem of reasonable utility charges.⁹⁴

UNREGULATED MONOPOLY. Public policy might permit the establishment of monopolies by utility corporations, thus foregoing competition with its wasteful duplication of facilities and cutthroat price practices, and allow complete freedom to corporations in the framing of their own price policies. This policy has been advocated on the theory that the self-interest of the corporate management would lead to the inauguration of a moderate price policy in the hope of developing the largest possible volume of business. While it may be conceded that in the long run the interests of investors and consumers may coin-

⁹³ Chapter XXIV.

⁹⁴ See Kohn, "A Re-examination of Competition in Gas and Electric Utilities," 50 *Yale Law Journ.* 875 (Mar., 1941).

cide to a certain extent, the deductions here made are scarcely valid. In the first place, the management of utilities is not in the hands of investors, and the long-run view does not always prevail with the management. And, furthermore, a monopolist, seeking to realize the maximum possible net income, will always find it profitable to restrict his output below the level of production that would prevail under competitive conditions, and in so doing will find it possible to exact a price substantially above that which would be charged under competition or even under regulated monopoly.

A monopolist can usually add to his profits, if there are differences in the elasticities of demand for his product in different parts of the market, by discriminating in price between different groups of purchasers. Of course, the modern utility under regulation discriminates in price between different classes of patrons when it charges one price for residential service, another for commercial consumption, and a different price for industrial consumption; but under regulation the differences in charges to different classes of consumers are presumably based significantly, if not exclusively, upon differences in the costs of serving each class. In the absence of regulation, there could be no assurance that the differences in the charges would approximate, or even be proportional to, differences in costs. In view of the vital importance of utility services to the health and general welfare of modern communities, the excessive prices and discriminatory charges of the unregulated monopolist justify the rejection of any such arrangement.

GOVERNMENT PARTICIPATION IN MANAGEMENT. The regulation of a privately owned, profit-seeking business by an external agency, such as the public utility commission, inevitably creates an antagonism of interests and authorities; hence, some observers have concluded that the functions of policy making in the public interest and of executive management in the interests of efficiency and profits should be blended in a single organization. There are many possible arrangements whereby the public might have a larger voice in the management of public utilities. (1) Public ownership and management has been the form most widely tried in this country. (2) Public management may be combined with private ownership. The capital may be supplied by private investors who purchase, not government bonds, but securities issued on the basis of the assets of the utility enterprise. Such private investors would presumably receive a limited return; all receipts above costs (including interest or dividends on securities) would be used to retire outstanding securities, or to finance additions to, and improvements in, the property, or, less justifiably, to add to the public revenues. (3) Public ownership combined with private management is not unknown. The plant may be purchased or constructed with public funds and operated by a private management on a salary basis. A proper attention to incentives could be expected to secure the highest attainable efficiency, and the public could be confident that the service would be supplied at cost.⁹⁵

CO-OPERATIVES. While the co-operative organization for the rendition of utility services is not unknown in this country, the co-operative program has only

⁹⁵ The problems of public ownership are considered in Chapter XXIV.

recently become significant as a solution of the problem of assuring a reasonable price for utility services. The development of co-operatives in rural electrification has been of importance since 1935.⁹⁶

REGULATION BY STATUTE AND FRANCHISE. Before commissions were instituted, regulation by statute, by franchise, and by charter was tried. Such regulations sought to establish minimum service standards and maximum rates. The many weaknesses which these methods of regulation have demonstrated have long since relegated these devices to a secondary role in the control of utility rates.⁹⁷

Regulation has also experimented with fixing the maximum dividend rates that utilities may pay on their outstanding securities.⁹⁸ Experience with this kind of control has demonstrated a lack of incentive to improve and extend the service so long as the corporation is earning the maximum return permitted under statutory standards.

Service-at-cost contracts. Service-at-cost, or sliding-scale, contracts seek to supersede the antagonism of external regulation by relating the earnings of the company to its efficiency in supplying service to consumers at low costs. The rate of return on the company's investment, or at least on that part of it which is distributable to stockholders, is made to vary inversely with the charge to consumers. The technical details of such contracts, together with their advantages and weaknesses, have already been set forth.⁹⁹ It is sufficient to note at this point that experience with service-at-cost arrangements has been at least as satisfactory as other forms of regulation of utility incomes, and that with proper precautions to preserve reasonable flexibility in modifying the basic plan, it avoids the objectionable features of regulation by means of franchise or charter.

A FAIR RETURN ON FAIR VALUE. The failure of the majority of communities to adopt some form of public ownership and operation, and the unsatisfactory character of the other programs of regulation necessitated the development of some new form of public control. The evolution of the commission as the prevalent instrument of utility regulation has already been traced.¹⁰⁰ Coincident with this development of the commission, the commissions and courts, largely under the pressure of the particular cases that came before them, evolved an approach to the problem of price regulation which has been quite generally adopted, and which seeks to permit the utility to earn "a fair return on fair value."

Constituents of the utility's income. Rate regulation by public service commissions, as a problem affecting the local utilities, has been concerned chiefly with the control of the total revenue accruing to the company. The economic object has been an equivalence between the total receipts of the utility and the total costs of rendering the service. The necessity for an increase in revenue, or the possibility of a decrease in income, is determined in relation to the present and prospective costs of rendering the utility service, and thus every rate case

⁹⁶ Chapter XXIV, Sec. 5.

⁹⁷ Chapter VI.

⁹⁸ Early Massachusetts statutes exempted railroads, and later street railways, from regulation of their rates so long as the dividends upon their outstanding securities should not exceed 10 per cent. (Mass. *Revised Statutes of 1836*, C. 39, Sec. 83, and Mass. *Acts of 1864*, C. 229, Sec. 26.) See Barnes, *Public Utility Control in Massachusetts*, pp. 87-91.

⁹⁹ Chapter VII. See also Chapter XVII, Sec. 4.

¹⁰⁰ Chapter VII.

becomes an occasion for a critical examination of the costs claimed by the company.

The costs to be recovered in the utility's income fall into four categories: operating expenses, taxes, provision for depreciation and retirement, and the "fair return."¹⁰¹ The significance of each of these cost elements may be indicated by Table 31, showing the distribution of total expenditures for typical utilities.

The nature and propriety of each of these elements of cost may be briefly indicated.¹⁰² Operating expenses include all costs not embraced by the other classifications; specifically, the amounts required to cover wages and salaries, fuel and other supplies, repairs, rentals, et cetera. Until the late twenties, the proper allowances for operating expenses did not present a seriously controversial problem in determining the total revenue requirements of public utility companies. To the extent that the companies maintained adequate accounting records, the experience of the recent past furnished the basis for satisfactory estimates of the expenses for the future. With the growth of holding-company systems and the increasing importance of intercompany payments, the operating expenses of utility corporations have been more and more frequently questioned in rate proceedings.

The taxes imposed on utility corporations are regarded as a part of the total expenses to be considered in establishing the revenue needs of the company. Utility taxes may take a variety of forms: property taxes, franchise taxes, taxes on capitalization or on issuance of securities, and income taxes. Many burdens imposed on utilities by their franchises partake of the nature of taxation, as the requirements for paving streets, removing snow, and providing free water or electricity for municipal buildings or streets. Generally these taxes raise no difficult problems for the regulatory commissions. The amount of such tax burdens is readily ascertainable, for they are a part of the public record. Furthermore, the passage of tax laws through the legislatures and the accompanying public discussion gives ample notice of impending changes.

Depreciation or retirement expense represents the cost imposed by the exhaustion of the service life of equipment in use for more than a single accounting period. Since the various phases of the depreciation problem are considered in detail elsewhere,¹⁰³ it is sufficient, for purposes of the present discussion, to note that depreciation is an inevitable cost of providing any utility service, and that some allowance therefor must be made in calculating the amount of income required by the corporation.

The fair return. The fourth component of the utility's income is the "fair return." The "fair return" is the term used by the courts and commissions to describe the amount of money judged necessary to enable the utility to meet its obligations to its security holders of all descriptions. The fair return is a composite of interest on bonds and certificates of indebtedness, dividends on common and preferred stocks, and, perhaps, some reward for efficiency of manage-

¹⁰¹ A fifth element has been suggested by those who would permit the utility to include some definite provision for the accumulation of a surplus.

¹⁰² More extensive discussion of these items will be found in Chapter XVIII.

¹⁰³ Depreciation accounting, Chapter VIII; Depreciation expense, Chapter XVIII; Accrued depreciation and the rate base, Chapter XIII.

TABLE 31
EXPENDITURES BY SELECTED UTILITY COMPANIES

Expenditures	Electric Companies ¹		Telephone Companies ²		Steam Railroads ³		Street Railways ⁵	
	Aggregate	Per cent ^b	Aggregate	Per cent ^b	Aggregate	Per cent ^b	Aggregate	Per cent ^b
Operating Expenses	1,187,485,381	47.0	717,044,423	58.3	2,722,199,007	75.1	408,063,205	72.6
Depreciation	234,069,847	9.3	157,508,634	12.8			36,992,360 ⁶	6.6
Taxes	349,811,279	13.9	145,113,163	11.8	346,781,954	9.4	445,055,655	79.2
Total	1,771,366,507	70.0	1,019,666,120	82.9	3,062,980,961	84.5	97,743,008 ⁷	17.4
Interest	282,905,347	11.2	41,801,746	3.4	478,339,878 ⁴	13.2	19,933,400	3.4
Dividends	432,661,679	17.1	168,181,146	13.7	82,732,566	2.3	-29,272,518	5.2
Appropriation to Surplus	35,944,483	1.4	-12,638,002	10.3	-56,043,296	15.4	561,832,153	
Total ^a	2,522,928,016		1,229,649,012		3,624,953,405			

^a Total of positive expenditures only; no inclusion of negative appropriations to surplus.

^b Percentage of total expenditures shown, including no negative appropriations to surplus.

¹ Federal Power Commission: *Statistics of Electrical Industries in the United States for the Year Ended December 31, 1937*; Classes A and B, Volume I.

² 1938 figures. Annual Report: American Telephone and Telegraph Company. Figures applicable to A.T. & T. Co.

³ 1938 figures. Association of American Railroads, Bureau of Railway Economics. Statistical Summary No. 23, August, 1939.

⁴ Includes interest on funded debt, interest on unfunded debt, and amortization of discount on funded debt.

⁵ U.S. Department of Commerce: Bureau of the Census. *Census of Electrical Industries: Electrical Railways and Motor-Bus Operations of Affiliates and Successors, 1932*.

⁶ Includes taxes assignable to railway operations and miscellaneous taxes.

⁷ Includes interest on funded debt and interest on unfunded debt.

ment. The costs of financing, such as the amortization of the discount on bonds and stocks, are also included in the fair return.

One's attitude toward the various items that are said to compose the fair return of the regulated utility will depend in part upon whether the utility is considered as an independent entity or whether the utility corporation be regarded simply as an intermediary between the consumers and the investors. Thus if the utility be regarded as a separate and independent entity, one may well stress the fact that interest on invested capital, regardless of the nature of the securities issued to represent the various increments of that investment, is in the nature of a minimum cost; that in addition to interest, a business is entitled to earn something in the nature of pure profits in the sense in which that term is used by the economic theorist; and that this profit should be larger in proportion as the management of the utility is more efficient. However, little is gained by the application of these concepts in the field of the regulated monopoly. Much of the confusion that has characterized the thinking on the matter of the appropriate fair return could have been avoided if commissions and courts had early recognized that they are required only to do even justice between two classes of individuals, the consumers who are called upon to pay for the services rendered and the investors who have provided the capital funds with which the service is rendered.

The adequacy of the "fair return" may be considered by either a commission in establishing charges sufficient to enable a corporation to meet operating expenses and its obligations to its security holders, or by a court in determining whether the charges so established are sufficient to avoid confiscating the utility's property in violation of the "due-process clause." The administrative problem before the regulatory commissions is the establishment of *reasonable* rates, rates that will permit the company to earn a *reasonable* and fair return. The commission is largely concerned with the continuing financial health of the utility, with its ability to render adequate service, and ultimately with its ability to attract new investments as needed in competition with other enterprises also seeking additional capital funds. The commissions' decisions must be governed not simply by considerations of abstract justice as between consumers and investors, but also by matters of expediency—the immediateness of the corporation's need for additional funds, the state of the investment market, and the relative safety of utility investments as an offset to the higher earnings often enjoyed by industrial concerns.

Many of the considerations that must be weighed by the regulatory commission are quite foreign to the problem that confronts the courts in deciding whether the rates established by regulatory authorities are *confiscatory*. For the courts the question is one of justice for both investors and consumers, and the economic conditions of the moment may rightly be regarded as more significant than the probabilities of the future. The courts have no responsibility for safeguarding the financial health of the corporation or assuring its ability to attract new capital under favorable conditions. They need only determine whether the investors are currently being permitted to receive a nonconfiscatory return on their investment.¹⁰⁴

¹⁰⁴ An attempt at a more precise formulation of concept of the "reasonable" and "confiscatory" return will be made when the rate of return is under consideration (Chapter XV).

The fair-value method. The fair-value form of regulation developed in the absence of other objective standards by which the fairness of the charges of monopolistic utilities might be judged. The central idea in this program of regulation has been that the regulated company should be permitted to earn, in addition to its operating expenses, taxes and an allowance for the depreciation of its equipment, a fair return upon the investment in, or the value of, its property. The concept of a fair return upon investment or value may be variously interpreted. The utility may be permitted to earn such sums as will permit it to pay the stipulated rates on its outstanding bonds and preferred stocks and some "fair" dividend upon its common or equity stocks. Or the corporation may be allowed to earn some fair percentage upon the investment in, or cost of, its assets, or at least, upon such as are used in serving the public, the investment or cost to be discovered presumably from the accounts of the company in question. Or the past history of the company, both with respect to security issues and capital expenditures, may be disregarded in favor of allowing a fair return upon whatever valuation would contemporaneously be attached to the property being used in the public service.

When these questions were first presented to the courts there seemed to be good and sufficient reasons for the rejection of the first two interpretations of a fair return. A "fair return upon the fair value of the property" became the standard. Under this theory of regulation it is necessary to determine a monetary sum which measures the "rate base" or "fair value" upon which the utility is entitled to earn a return, and secondly, to determine the percentage rate of return which is fair in the particular instance, the product of the "rate base" and the "fair rate of return" being the measure of the net operating profits which the utility is permitted to earn. The principles which control the finding of this rate base and the rate of return, and the practices of courts and commissions in ascertaining this rate base and fair rate of return are the subject matter of the chapters which follow. But before coming to a consideration of the control of the earnings of public service companies it is necessary to give attention to the price policies of utility companies and their regulation.

CHAPTER X

UTILITY PRICING POLICIES

I. GENERAL CHARACTERISTICS OF UTILITY PRICING

The price policies of utility companies are largely determinative of the extent and character of the services which they will develop. Most utilities are monopolies, and if left unregulated they would probably find it most profitable to conclude individual price bargains with each of their consumers, assuming that such a procedure was not impractical because of the large number of consumers involved. In the beginning some companies did follow this policy, and even today large industrial consumers sometimes take service under rates which are arrived at by bargaining and negotiation with the utility. For other than the very large consumers it would not be practical for most utilities to seek such a refinement in rates as to permit charging each individual consumer according to the value of the service to him. Instead, utilities have established a particular price, or schedule of prices, for each class or category of service. There may be not only a different rate for each class of consumer, but also a different price for each use to which the service is applied. Quite complicated rate structures are characteristic of steam railroads and of the electric utilities. Telephone companies and gas companies may also have complex systems of pricing their services. Other utility companies, such as street railways and water companies, have followed a very simple pricing policy.

Historically, many utility companies began by serving only a single class of customer at a uniform rate. As they found that they had idle capacity, companies naturally sought to develop a market for that capacity through offering price concessions. Experimentation with such price adjustments soon developed that it would be possible for the utility to supply a quite diversified market if it would adjust services and prices to the conditions of that market. It was this attempt to develop new markets, in order to achieve full utilization of productive capacities, that led utility companies along the road to the complex rate structures which now quite generally prevail. Having achieved better adjustments of the market to plant capacity, the trend seems to be in the opposite direction, toward simplification and more uniform systems of charges, both with respect to different classes of service and different geographic areas.

It will clarify the discussion which follows if attention is devoted briefly to the functions of price. The first and primary function of price is to yield a total revenue sufficient to cover the total costs of rendering the service. The price charged for the individual service should be sufficient to cover at least the out-of-pocket costs attributable to that service. The maximum price for any service is set by a value of the service to consumers; that is, the utility must not charge a price so high that consumers will cease to utilize the service. Within these limits—a maximum set by the value of the service and a minimum set by the out-of-pocket costs of rendering the particular service—there is range for judgment with respect to the specific rate for the service. It should be the goal of

rate-making policy to distribute equitably between the different classes of consumers and between the different individual consumers those general costs which are incurred on behalf of the entire service. For the utility company, it is important that the pricing system be designed to stimulate an expansion of the demand for the service. From the public's point of view, it is desirable that prices be so established that consumers are permitted to take additional increments of the service as long as the value of the service to them is in excess of the cost to the company of providing the additional service.

2. THE NATURE OF UTILITY COSTS

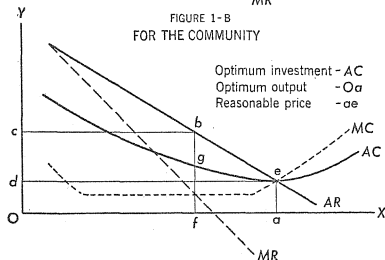
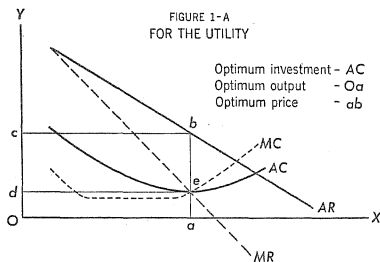
AVERAGE PRICE IN RELATION TO TOTAL COSTS. Two analyses of the nature of utility costs in relation to price are necessary in order to reveal the considerations which shape the price policies of the companies and of the regulatory authorities. A first analysis is concerned with the relation of the average price of the service to the costs incurred by the utility. This type of analysis is directly applicable to those utilities which find it either necessary or desirable to render only a single class of service at a uniform price. Many of the local transit companies operate with a single uniform price. For these utilities it is convenient to analyze costs into overhead costs, variable costs, and marginal costs. The overhead costs are those costs whose magnitude is determined by the size of the utility's investment and the size of the overhead staff with which its operations are carried on. These are costs which do not vary with changes in output, though a change in investment or in plant capacity would result in a change in the overhead costs. Typical of overhead costs would be interest on the investment, taxes, insurance, and depreciation in so far as the depreciation is not a function of the volume of output. Some of these overhead costs are avoidable if the plant should cease to operate; namely, expenses for heating and lighting, and the wages and salaries of that part of the personnel whose employment would not be continued if the plant should shut down. Other overhead costs—interest, taxes, insurance, et cetera—continue whether the plant operates or not.

The second category includes the variable costs. These are the costs whose magnitude is dependent upon the output of the plant; the total of the variable costs will fluctuate with changes in output. Typical of variable costs are expenditures for operating labor, for fuel and other materials, et cetera.

The marginal costs, or increment costs, are the changes in total cost that are incurred with a change of one unit in the output.

The price which the utility company would voluntarily fix for its product depends upon the relative magnitude of the overhead and variable costs and the rate at which they change with variations in output, and upon the relative elasticity of the demand for the utility's product. For the utility company, the optimum investment and the optimum output are indicated by Figure 1-A. The average-revenue curve, *AR*, indicates the quantity of the utility's service which consumers will use at various prices. The marginal-revenue curve, *MR*, records the increase in total revenue that results from a unit increase in sales. The marginal-revenue curve slopes downward to the right because additional units of output can be sold only by offering a reduction in price, and the reduc-

tion in price applies to all units of the output. The behavior of total costs is indicated by the average-cost curve, AC , whose ordinates indicate the average cost per unit for different volumes of production. The location of the curve, particularly the location of the low point on the curve, e , in relation to the OY axis



marks the output for which average unit costs are at a minimum, and is indicative of the investment in the utility plant; an increase in investment would shift e to the right and a decrease in investment would place it to the left of the indicated position. The marginal-cost curve, MC , records the addition to total costs resulting from an increase of one unit in output. Whatever the size of the plant with which the utility operates, the optimum output—that is, the output which will give the utility a maximum profit—is that indicated by the intersection of the marginal-revenue, MR , and marginal-cost, MC , curves. Before these curves intersect each additional unit sold adds more to the income of the utility than it adds to its costs; after the intersection, each additional unit adds more to costs than to revenues. Under the conditions indicated in Figure 1-A, the utility will find it advantageous to produce Oa units of service, and those Oa units may be sold at a price of ab per unit. The cost is ae per unit, the total costs being $Oaed$; this total cost area includes a normal profit for the utility company. The area $debc$ is the monopoly profit which the utility receives from

its ability to restrict the amount of the service to Oa , or more likely, from its ability to set a price of Oc . It will be noted that not only is the optimum output for the utility indicated by the intersection of the marginal-cost and marginal-revenue curves, but that the profit is at a maximum when this intersection coincides with the intersection of both curves with the average-cost curve. It is normally the objective of a company to adjust its investment so as to obtain the low unit costs that result from a full utilization of its capacity. This situation will prevail when the marginal-revenue curve intersects the intersection of the marginal-cost and average-cost curves. If the point e should be to the right of its present position, the utility would have an investment in excess of that required to meet the demand of the market at the price which maximizes the utility's profits. With a smaller investment—that is, if the point e should be to the left of its indicated position—the utility would be producing under conditions of rising marginal costs, and it could profitably invest additional capital in the enlargement of its plant.

If the relation between price, output, and cost be analyzed from the point of view of the consuming public, the most desirable investment and output are indicated by Figure 1-B. It will be noted that from the community's point of view a larger investment is justifiable and a larger output should be sold at a lower price. For the community, optimum results are obtained when the average-revenue curve, AR , intersects the intersection of the marginal-cost, MC , and average-cost, AC , curves. Here the output of the industry would be Oa units, and the price would be ae per unit, a price sufficient to cover all of the costs of the utility, including a normal return on the investment, and ae would correspond to what is normally designated a reasonable price.¹

An examination of these two charts reveals one very significant point. With any given investment, there are many prices which the utility might set which would yield little more than a reasonable return to the company. Considering Figure 1-B, it appears that if the utility should set a price higher than ae its total profit might appear to be little more than a reasonable return, and there might be no agitation for a reduction in rates; the more elastic the demand for the utility's service, the more likely is the appearance of a "reasonable return" with a high price and a restricted output. Yet it might be possible for the utility, by offering a reduction in rates, so to increase the sale of its product and reduce the unit cost of production as to realize a reasonable return on the larger output. With any given investment in plant and equipment, the utility is under an obligation to the public to realize a reasonable return with the lowest possible price and the largest volume of sale. Furthermore, the reasonableness of the utility's earnings on its existing investment is not conclusive evidence that the rate may not be unreasonably high. Referring to Figure 1-A, it might be said that the utility was charging a reasonable price if the price established was that indicated by the intersection of the average-revenue, AR , and marginal-cost, MC , curves, but an inspection of the diagram reveals that the price would yield

¹ It will be noted that even with this larger capacity, the utility would find it to its advantage to restrict its output to Of units, the intersection of the marginal-revenue, MR , and marginal-cost, MC , curves; and that if it did so restrict output it would be able to exact a price of Oc per unit. Though the unit cost of production would be greater, fg per unit, the utility would thereby realize a monopoly profit of bg per unit.

an unnecessarily high profit to the company and that from the public's point of view it would be desirable for the utility to enlarge its plant so that the average-revenue curve, AR , would intersect the marginal-cost curve, MC , at the latter's intersection of the average-cost curve, AC , that is, the condition shown in Figure 1-B. A public utility is under an obligation to the public to enlarge its plant as long as it is possible for the utility to sell a larger volume of output at a lower price, while still earning a reasonable return on its investment.

INDIVIDUAL PRICES AND COSTS FOR DIFFERENT CATEGORIES OF SERVICE. If a utility supplies service to various categories of consumers and charges different prices for each class of service, the profitability of its policy of price discrimination, or differential charging, is the result of differences in the elasticity of demand for different classes of consumers. Its operations will be most profitable when the marginal revenue from sales to each class of consumer is equal to the marginal cost of production for that class. Where differential charging, or price discrimination, is followed, a different analysis of cost is significant in judging the reasonableness of its price policy. Electric utilities, the steam railroads, gas companies, water companies, and telephone companies are all examples of utilities serving a composite market and practicing differential charging. For these utilities it is necessary to analyze costs in such a way as to reveal as accurately as possible the costs imposed upon the company by each class of service, and in addition the costs that arise from the sale of additional units of service to each category of consumer. For the purposes of this type of analysis, utility costs fall into three classes: the costs associated with the readiness of the utility to render the service; the costs that are proportional to the output or to the volume of service which the consumer takes; and the costs which are relatively uniform per consumer, irrespective of the amount of the service which he takes. These three classes of cost are called, respectively, demand costs, commodity or output costs, and customer costs.

ACCOUNTING ANALYSIS OF COSTS. Most utility companies are required to keep their accounts according to a standard system prescribed by regulatory authority. The classifications followed with respect to capital and operating expenditures normally record these items for different types and categories of property by geographic divisions. From these accounting classifications, it is possible to find how much of the utility's investment is located in any particular community, and what proportion of its investment is represented by different categories of property; but such accounting systems will not yield direct data with respect to the costs for any particular class of service. From such an accounting classification of investment and cost, it would presumably be possible for an electric company, for example, to discover how much of its investment should be assigned to generating or production costs, how much to costs of transmission, and how much to costs of distribution. It would also be possible to discover what costs are for the managerial and clerical staffs; and perhaps even what expenses are due to a new business campaign, to keeping the records and billing consumers, or to other specific operations. But further analysis and synthesis are necessary before the accounts yield significant data with respect to the reasonableness of the prices charged for particular services. The present systems of accounts are not capable of yielding the requisite data for a precise

determination of the costs of particular services; indeed, the joint character of most utility costs makes such precision beyond the scope of any accounting system.

CLASS ANALYSIS OF COST. Utilities are frequently criticized because different prices are charged to different groups of consumers for what appears to be a similar service. Thus, the electrical utilities have quite different rate schedules for domestic consumers, for commercial consumers, for large power consumers, for street railways, and for street lighting, et cetera, although all consumers receive kilowatt-hours. Statistics with respect to the sale of electric energy for the year 1937 reveal that residential consumers took 17 per cent of the total output of the electric energy and paid approximately 34 per cent of the revenue which the utilities derived. In the same year, commercial consumers took approximately the same percentage of the total output of electrical companies and paid 28 per cent of the total revenue, while industrial consumers absorbed 54 per cent of the output and paid only 28 per cent of the revenue.

TABLE 32

RELATIVE SALES AND REVENUE BY CLASS OF CONSUMERS FOR ELECTRIC UTILITIES *

	<i>Domestic</i>		<i>Commercial</i>		<i>Industrial</i>		<i>Farm</i>	
	%	%	%	%	%	%	%	%
	Total Sales	Total Revenues	Total Sales	Total Revenues	Total Sales	Total Revenues	Total Sales	Total Revenues
1926	12.0	30.8	16.9	28.1	57.0	31.4	1.3	1.4
1930	14.4	32.3	18.7	28.9	53.8	28.5	2.4	2.3
1935	17.4	35.2	17.5	27.1	52.8	27.3	2.2	2.5
1937	17.0	33.9	17.7	27.7	54.0	28.1	2.4	3.1

	<i>Municipal street lighting</i>		<i>Street and interurban electric railways</i>		<i>Electrified and steam railroads</i>		<i>Municipal and miscellaneous</i>	
	%	%	%	%	%	%	%	%
	Total Sales	Total Revenues	Total Sales	Total Revenues	Total Sales	Total Revenues	Total Sales	Total Revenues
1926	2.8	4.5	8.8	3.1	0.8	0.3	0.3	0.4
1930	3.0	4.8	6.7	2.3	0.8	0.3	0.7	0.6
1935	2.5	4.1	5.4	1.9	1.1	0.4	1.1	0.8
1937	2.3	3.8	4.5	1.3	1.3	0.5	1.0	1.0

* Source: *Moody's Public Utilities*, 1938, pp. ar8, ar9.

Table 32 supplies similar information with respect to selected years from 1926 to 1937. This situation naturally raises the question whether the utility is collecting from the residential and commercial consumers more than their fair share of the cost of the service, or conversely, whether the industrial consumers are paying as much as they should toward the costs of operation.

Criticisms with respect to the rates charged for different categories of service have naturally led to the demand that utilities justify the allocations of cost which these rate structures embody. Since most utility operations involve large elements of joint costs, it is impossible for the company to show directly the

costs assignable to any one class of service. Any allocation of costs must necessarily be arbitrary. Yet such "arbitrary" allocations of costs must serve as the basis for rate schedules and for resolving questions of discrimination and prejudice when these issues arise.

A FUNCTIONAL ANALYSIS. The first step in a functional analysis of cost requires a classification of each of the principal investment accounts and each of the operating expense accounts according as the investment or cost involved falls into the category of demand costs, commodity costs, or customer costs. Some of the costs fall clearly within one category, some costs apply to more than one. For example, the investment in generating plants, in transmission-line capacity, and in substation capacity is for the benefit of all classes of consumers, and the amount of this investment is dependent upon the aggregate demand which consumers make on the utility's system. These then are demand costs. The investment in transformers falls into two categories, demand costs and customer costs. The investment in meters belongs primarily in the customer costs category. Turning to operating expenses, a part of the labor costs is proportional to the demand, and another part is a function of the volume of output. Fuel costs are chiefly commodity, or output, costs. The depreciation is in part a function of use and in part a function of the investment; the first should be treated as a commodity cost and the second as a part of the demand costs.

When the analysis is carried beyond the first stage of segregating the demand costs, the commodity costs and the customer costs, to the allocation of these costs among the different classes of service, further arbitrary elements enter. All of the costs of the utility company, both capital costs and operating costs, are incurred on behalf of the entire service, and it is quite impossible to make more than a rough estimate of what costs might be avoided if any one class of service should be discontinued.

A continuation of the functional analysis requires a closer examination of *demand, output, and customer costs*.

DEMAND COSTS. The demand costs are those which are imposed upon the utility by the capacity—in terms of plant, equipment, and personnel—which it must hold in readiness to serve its customers. For some utilities, the obligation to furnish immediate and continuous service on demand is coupled with an inability to store the product, and the cost of being always prepared to meet the demand may be very great; the critical plant capacity is the productive equipment, as in the case of electric and telephone companies. For other utilities, the critical capacity may be the distribution system; a gas utility, for example, is able to store its product and, therefore, is not under the necessity of providing the manufacturing capacity required to meet instantaneously its peak demand.

It is useful to distinguish between demand for an individual or for a class of consumers, and the total demand on the whole system. It should be noted that while the total demand costs are a function of capacity, both in terms of plant and personnel, the demand cost for a consumer or a class is a function of the time and rate of consumption attributable to the consumer or to the class of consumers. This may be illustrated by assuming two consumers, A and B, each of whom consumes 100 kilowatt-hours of electricity per month. A's use

of electricity is for lighting and for refrigeration, and at any one moment of time he may take the energy at the rate of 500 watts per hour. B, on the other hand, uses his consumption for an electric stove in addition to lights and refrigeration, and consequently concentrates his demand so that at times he may be taking energy at the rate of 2,000 watts per hour. Though both consumers require the same number of kilowatt-hours per month, the company must have four times as much capacity available to meet B's demand as to meet A's maximum demand.

The measurement of demand. The refinements that are worth while in the calculation of the demand for individual consumers and for different classes of consumers depend upon the nature of the utility service and the extent to which there is a lack of homogeneity among the different classes of consumers. Where the utility serves a large number of consumers under diverse conditions, it may become quite important to measure accurately the extent of demand and the time when it occurs for each class of service.

The measurement of demand for electrical utilities is a matter of acute importance both in the establishment of prices and in judging their fairness. Three devices are followed—continuous measurement, occasional test, and estimate. For the large industrial power consumers, it is feasible to install a meter to measure and record the demand continuously. For other consumers who are taking a substantial amount of energy and using a variety of electrical equipment, the utility may run occasional tests to determine the maximum demand. For other consumers it may be possible to estimate the demand from the connected load: the current required for street lighting, for display lighting and similar uses, is simply a function of the capacity of the equipment in use. For residential consumers, the demand may be estimated on the basis of the connected load or the area to be illuminated, for example, the number of rooms in the house. Where the consumption characteristics of all of the individuals in any class of consumers are fairly homogeneous, a sample study will indicate the average demand.

In measuring the demand the object is to determine the rate of consumption over a stated period of time, not to identify the chance or unrepresentative peak. The time period for the measurement of demand adopted by electric companies ranges from 5 minutes to 60 minutes. The 15-minute demand and the 30-minute demand are commonly adopted as standards, the former being preferred. The selection of the longer demand period for the measurement gives a lower demand figure.

The billing demand. Utilities follow different practices with respect to billing for demand; for example, with electrical companies three practices are common:

(1) The billing demand may be based upon 100 per cent of the customer's connected load. If the demand charge is based on the connected load, the *amount* of the charge would presumably be less than with other methods, for the consumer would rarely make use of 100 per cent of his connected load.

(2) The utility company may make the demand charge upon only a part of the customer's connected load, as in the following:

COMMERCIAL LIGHTING (OPTIONAL) ²

Availability.—Commercial lighting and incidental power.

Demand charge: \$2.25 per kilowatt of demand.

Energy charge:

2.7 cents kilowatt-hour first 90 hours' use of demand.

1.8 cents kilowatt-hour excess.

Determination of demand—By estimate as follows:

Class A—All customers not specifically mentioned below, 90 per cent first 2 kilowatts connected, 80 per cent next 3 kilowatts connected, 60 per cent excess.

Class B—Department stores, hotels, and office buildings (service to the building as one customer, but not including stores on the first floor), 70 per cent first 5 kilowatts connected, 50 per cent next 5 kilowatts connected, 30 per cent excess.

Class C—Vaudeville, moving-picture shows, and similar amusement places, 60 per cent first 5 kilowatts connected, 40 per cent excess.

Et cetera.

Here the actual connected load of the consumer forms the basis for an objective determination of what might be his maximum demand. The experience with different classes of consumers has indicated that each category of consumer has its characteristic habits with respect to the proportion of the connected load employed at any one time, and the proper adjustment is applied to the connected load to derive the billing demand.

(3) Where consumptions are very large and where the demand characteristics of the individual consumer do not conform to a reasonably standard pattern for his class, it may be both economical and desirable for the utility to measure the demand continuously through the installation of permanent demand meters or through the use of meters to make short tests.

Determination of demand costs. Having analyzed the investment costs, or fixed costs, and the operating costs for the purpose of determining which of these costs are properly classified as demand costs and which are commodity costs and customer costs, the next step is the allocation of the demand costs among the different classes of service. These costs cannot be divided equally among the different classes of service, for each class is not equally responsible for the costs of providing adequate capacity in equipment or personnel. These costs cannot be distributed on the basis of amount of energy or other service-unit taken by each class of consumers, for the timing of the consumption may be such that some services require no additional productive capacity, while others call for increased capacity.

When the allocation of demand costs was first attempted, it was assumed that each class of consumers should be assessed in proportion to its responsibility for the system's peak demand. Thus, if at the system's peak, industrial consumption accounted for 45 per cent of the required capacity, commercial consumption for 20 per cent of the output, and residential consumption for 17

² Federal Power Commission, *Electric Rate Survey, Rate Series No. 4*, p. 9.

per cent of the output, then these different classes should bear in that proportion the costs of providing the peak capacity. Table 33 illustrates this method of allocating demand costs under the designation "peak responsibility."

TABLE 33
ALLOCATION OF DEMAND COSTS

<i>Class of Service</i>	<i>Peak Responsibility</i>		<i>Non-coincident Demands</i>	
	<i>Kilowatts</i>	<i>Per Cent</i>	<i>Kilowatts</i>	<i>Per Cent</i>
Residence	17,000	17	20,000	13
Commercial	20,000	20	21,000	14
Industrial	45,000	45	85,000	57
Electric railway	10,000	10	12,000	8
Street lighting	8,000	8	8,500	6
Miscellaneous	—	—	3,500	2
Total	100,000	100	150,000	100

The weaknesses of the peak-responsibility method of allocating demand costs have led to its general abandonment. First, the class of service responsible for the system peak may change from time to time, and strict adherence to peak-responsibility allocation might require frequent and disturbing changes in rates. Such shifts in peak responsibility would arise for an electric utility if a large proportion of the output should be absorbed by large-scale industrial consumers; from one phase of the business cycle to another there might be a complete shift in "responsibility" for peak capacity. To make corresponding changes in demand charges would be unfair, uneconomic, and impractical. Secondly, the peak-responsibility method might relieve from all burden with respect to demand costs those classes of consumers who are not at all, or only slightly, responsible for the system's peak demand. The unfairness of this is apparent, for the utility would presumably be required to supply those consumers even though there were no other categories of consumers. Since all classes of consumers benefit from the utility's service, all should bear *some* share in the demand costs. Thirdly, an attempt to assess demand costs on the basis of peak responsibility might result in such high costs for some services as to deprive the utility entirely of that part of its patronage, with the result that other classes of service would have to bear heavier costs. Fourthly, if the utility should follow the policy of charging only the increment costs of supplying the service—that is, if any class of consumer should be exempt from all burden for demand costs—there would be a strong probability that the company might subsequently be compelled to install additional capacity. The class of consumers being served at increment costs might become responsible for a part of the utility's investment in plant capacity, yet after such a class of favored service had developed, it would be extremely difficult, if not impossible, for the utility thereafter to increase rates enough to cover the demand costs occasioned by this service. In the long run, it is wiser policy for each class of service to bear a fair share of the fixed or overhead costs, even though on the peak-responsibility basis it could not be held accountable for any of the investment.

The "non-coincident-demand" method of allocating demand costs has generally displaced the peak-responsibility method. This method would impose on each class of consumers that proportion of the demand cost of the system which its demand bears to the maximum demand for the entire system. This method is also illustrated by Table 33. Thus it may be noted that the industrial consumers have a maximum class demand of 85,000 kilowatts, although only 45,000 of that maximum demand coincides with the peak for the utility. On the peak-responsibility basis, the industrial consumers would be charged with only 45 per cent of the demand costs; while on the non-coincident-demand method of allocation, the industrial consumers would be charged with 57 per cent of the demand costs. On the other hand, the commercial-lighting consumers would find that, although their maximum demand as a class was little greater than the maximum demand which occurs at the peak of the system, their proportion of the demand costs would decline from 20 to 14 per cent—that is, they would benefit from the diversity in demand as between different classes of service.

The advantages of the non-coincident-demand method of allocating demand costs are that it affords a more stable basis for the allocation of demand costs than is provided by the peak-responsibility method; that it offers to each class of consumers the benefit of diversity in demand with respect to all classes of consumers; and that even those consumers whose consumption does not coincide with the system peak make some contribution to the demand costs. There are, of course, certain weaknesses in the non-coincident-demand method: it permits a class of service making 100 per cent use of productive capacity to share equally with other classes in the benefits of diversity, although it, as a class, contributes nothing to such diversity; the same is true to a lesser extent of any class of service whose load factor is higher than the average for the system, and correspondingly, any class of service with a load factor less than the system average would not gain the full benefits of the savings resulting from the diversity which its service creates.³

Diversity. In the allocation of demand costs among different classes of consumers recognition of diversity is fundamental. The maximum demand for service by different consumers and by different classes of consumers occurs at different times; hence different individual consumers and different classes of consumers find that the same productive capacity is available to satisfy their several demands. Technically, diversity is the ratio between the total maximum demand of the individual consumers and the maximum for that class, this being the "class diversity"; or it is the ratio of maximum demand for different classes of consumers with respect to the maximum demand which the system as a whole shows, this being the "system diversity." The greater the diversity, the lower the unit cost which each class, or which each member of a class, has to bear in order to enable the utility to recover its full demand costs. A failure to recognize the importance of diversity in the calculation of the demand charges would result in charging consumers in the aggregate more than the total demand costs imposed upon the utility. The proper determination of

³ These weaknesses may be met by using kilowatt-hours of consumption rather than kilowatts of demand as a basis for allocating the demand costs.

the diversity factor is essential to an equitable allocation of the demand costs among the various classes of consumers.⁴

The extent of the diversity depends upon the character of the service which the utility supplies. Referring again to the electric utility for an example, the diversity factor for a company serving a diversified group of small consumers may characteristically range from 6 to 10; that is, the maximum demand of the individual consumers may be 6 to 10 times as great as the demand which the utility experiences. In general, the greater the variety of uses of the utility service, the higher the diversity factor. The more homogeneous the body of consumers, the lower the diversity factor. Thus a company supplying only lighting service to residential consumers would have a lower diversity than a utility supplying energy to commercial establishments and to industrial concerns as well. The greater the consumption or the higher the load factor with respect to any class of business, the lower the class diversity. Thus, the industrial concerns which operate with a full load twenty-four hours a day would show no diversity whatever, or a diversity only slightly greater than 1.⁵

The discussion of diversity may be made more explicit with an example, Table 34.

TABLE 34
DIVERSITY AND DEMAND
(Assuming Demand Cost is \$1.00 per Kilowatt)

	Aggregate demand	Maximum demand	Diversity	Demand charge per kilowatt	
				Class	System
Class A	100 kw	20 kw	5.00	\$0.20	\$0.17
Class B	100 kw	80 kw	1.25	0.80	0.68
System, Classes A and B	100 kw	85 kw	1.18		

For purposes of illustration it is assumed that the utility is serving only two classes of consumers, Class A and Class B, and the figures used have been selected so as to simplify the arithmetic. The aggregate of the maximum demands for the individual consumers composing each class is 100 kilowatts. For Class A, the maximum class demand is 20 kilowatts; and by definition the diversity factor with respect to the individuals making up Class A is 5. The maximum demand which Class B consumers impose on the utility is 80 kilowatts, and the diversity factor for Class B is 1.25. But the maximum demands for Class A and Class B will presumably not coincide. Assume that for the utility system the aggregate demand of 100 kilowatts (80 from Class B and 20 from Class A) results in a maximum demand on the utility system of only 85 kilowatts; then there is a diversity factor for Classes A and B together of 1.18. If it be assumed that the demand cost is \$1.00 per kilowatt, the allowance

⁴ A very excellent discussion of the importance of diversity factors in the calculation of demand costs is contained in *Re Wisconsin Public Service Corp.*, 7 P.U.R. (N.S.) 1-13 (Wis., 1934).

⁵ The fact that lower diversities are frequently associated with larger consumptions is recognized indirectly in the construction of rates for large industrial consumers, by including in the energy rates for the higher blocks of consumption a charge which is more than the output cost per kilowatt-hour.

for class diversity alone would indicate a demand charge of 20 cents per kilowatt for Class A consumers and 80 cents for Class B consumers. When the diversity between Class A and Class B is recognized, the respective demand charges become 17 and 68 cents. The utility will recover its total demand costs of \$85 if each Class A consumer is charged 17 cents per kilowatt of demand and each Class B consumer is charged 68 cents per kilowatt of demand. It should be repeated that these figures are not representative of the demand costs of any actual electric company.

OUTPUT COSTS. The output costs are those costs which are a function of the volume of production and sale. These are the costs which relate to the utilization of the existing capacity rather than to the amount of the capacity itself. Thus, most of the costs which fall into the category of the output costs are expenses of operation. Labor, fuel, materials, supplies, some of the expenses for repairs, some of the expenditures for depreciation—these costs are typical of those associated with the volume of a utility's production.

CUSTOMER COSTS. The customer costs are those costs which can be directly assigned to the individual customer. Some costs, if not uniform from one customer to another, are at least identifiable: they are independent of the demand for or consumption of, the service. Typical of customer costs are expenses for the installation of equipment on the premises of the customer; the lines and pipes that carry the utility's product into his house, the meter, and any other equipment. Other customer costs are operating expenses: the costs for meter reading, billing, collection, inspections of the equipment on his property, et cetera. In the aggregate these costs are relatively large, but for any one consumer, they are a small fraction of the annual cost of the service. Where consumers are relatively homogeneous in their service requirements, the utility may not feel justified in charging separately for customer costs.

THE ECONOMICS OF DIFFERENTIAL CHARGING. The practice of differential charging, or "charging what the traffic will bear," has a historical background in utility price policy. Having idle capacity, utility companies have attempted to spread the burden of overhead costs by expanding output. But additional business has normally been available only on the basis of price concessions. However, the desire to maintain existing revenues has caused the price concessions to be limited to new business—to new classes of consumers or to additional consumption by present customers.

Whenever a system of differential charging develops, there are criticisms and charges of unjustifiable discrimination. Such charges can be answered only on the basis of an analysis of the facts of the case.

Table 35 may illustrate the economic justification for differential charging. It is assumed that a utility with an investment of \$100,000, consisting half of bonds bearing interest at 4 per cent and half of capital stock on which the established dividend is 6 per cent, is selling 200,000 kilowatt-hours at 6 cents per kilowatt-hour, realizing gross revenues of \$12,000. By assumption, this \$12,000 just covers the costs; bond interest and dividends account for \$5,000, depreciation and taxes, for \$3,000, and operating expenses, for \$4,000. It is assumed that the company has a chance to develop an industrial market that will absorb 100,000 kilowatt-hours if it offers a price of 2 cents per kilowatt-hour. Thus, the

TABLE 35

ECONOMICS OF DIFFERENTIAL CHARGING ILLUSTRATED

Investment—\$100,000 (Bonds, \$50,000; Stock, \$50,000). The utility sells 200,000 kwh at 6 cents per kwh, realizing \$12,000.

Its costs:	Bond interest	\$ 2,000
	Dividends	3,000
	Depreciation	2,000
	Taxes	1,000
	Operating expenses	4,000
		<hr/>
		\$12,000

If	100,000 kwh sold at 2 cents per kwh	\$ 2,000
	Operating expenses increased	1,000
	Other costs unchanged	<hr/>
	Increase in net income	\$ 1,000

additional output could be sold for \$2,000. If it be assumed that operating expenses would be increased by \$1,000, and that other costs remain unchanged, this rate concession would enable the utility to realize \$1,000 of additional net income. The critical question is whether the rate of 2 cents for industrial consumption constitutes a discrimination against the consumers paying 6 cents per kilowatt-hour. No conclusion with respect to discrimination can be drawn from the fact that the rates are different. If the price charged to the industrial consumer suffices to cover the additional costs which that service imposes upon the utility, which it does, and makes some additional contribution, however small, toward the utility's overhead expenses, the additional business benefits other consumers. In this illustration, the company receives an additional \$1,000 of net income. If the utility should be already earning a fair return, this \$1,000 of income would be available for rate reductions, presumably for the benefit of the consumers theretofore paying 6 cents per kilowatt-hour. Because the company has obtained additional revenue it is able to supply service to its previous consumers at the rate of $5\frac{1}{2}$ cents per kilowatt-hour and still cover its total costs including a fair return on the investment.

Conditions may arise where the practice of differential charging involves discrimination. If, in the illustration presented above, the new business had imposed an additional cost of \$2,000 on the utility company, the company would not have been justified in selling the additional 100,000 kilowatt-hours at the 2-cent rate. If the industrial consumers could have been persuaded to pay $2\frac{1}{2}$ cents per kilowatt-hour, the question may be asked whether they are paying a fair share of the overhead cost; presumably such overhead cost should be distributed according to the principles previously expounded. If the industrial consumers cannot be persuaded to take power at more than 2 cents a kilowatt-hour and if at that price the utility is able to realize some income over and above the additional costs incurred, it is difficult to see any unjustifiable discrimination with respect to the other classes of consumers, and this decision is reinforced if the utility company is, in consequence, able to grant a rate reduction to such other consumers.

3. COMMISSION JURISDICTION

The law imposes two responsibilities upon utilities with respect to their rates and charges. The charges must be reasonable; and reasonableness is required not simply with respect to the general level of rates, but also for individual rates. The utility must also avoid all unjustifiable discrimination. On complaint or on its own initiative, the commission may investigate any rate, and if it finds the rates to be unreasonable or discriminatory, it may order the removal of the discrimination or even specify the rates to be thereafter charged.

Discrimination in utility charges may arise from a variety of circumstances. Discrimination exists if two consumers are charged different prices for what is essentially the same service. Discrimination may arise if two consumers pay similar prices for essentially different services. Discrimination may also arise if the differences in price between two classes of service are greater or less than the significant differences in the conditions surrounding the service.

A mere difference in price is not necessarily evidence of unfair discrimination. A difference in price may be justified not simply on the basis of differences in cost, but on the basis of differences in competitive conditions affecting different parts of the market. The differences in price that are the essence of differential charging are justifiable where the net result is a rate structure which brings the service to consumers generally at lower prices than would otherwise be available; or where the company is thereby enabled to improve its service.

Insufficient attention has in the past been devoted to what should be the relation between the commission and company with respect to rates. In the establishment of the utility's scale of charges, there is even more need for rate planning than for rate regulation. Where fundamental economic conditions permit, the total revenue of the utility must cover the total cost of supplying the service, including a fair return. In theory, the price for each service should cover those additional, or out-of-pocket, expenses which are incurred on behalf of that service, and in addition should make some contribution to overhead costs. Actually, however, costs with respect to particular services are not, and apparently cannot be, known with sufficient accuracy to permit the designation of particular rates for the purpose of covering specifically the costs attributable to any one class of service. Utility companies are outstanding examples of the condition of joint costs in the rendition of service. Rate planning is needed, therefore, not only to assure an equitable allocation of common costs among different classes of consumers, but even more to arrive at that scale of charges which will permit the utility to enlarge its market and achieve those lower unit costs which are basic to rate reductions for all consumers.

The mere fact that there is an equality between revenue and costs is not conclusive evidence of the reasonableness of the utility's charges or of the absence of necessity for rate planning. Every change in rates probably influences consumption, and there are presumably many combinations of price and output that will produce the requisite revenue. It should be the joint effort of regulatory authorities and management to achieve that combination of lowest price and largest volume that will enable the company to recover all of its costs. The

achievement of this objective requires planning and experimentation by the company, and regulation should provide the company with opportunities and the financial resources for experimenting with rate changes to determine that scale of charges which is in the best interests of investors and consumers.

4. ELECTRIC RATES

BASIC CLASSIFICATIONS. *Residential.* Residential service includes all service that is made available at the home of an individual consumer. There may be a single residential schedule for lighting, refrigeration, cooking, water heating, and other uses; or the utility may have more than one residential schedule and list separate rates for refrigeration, cooking, hot-water heating, et cetera. The present tendency is in the direction of a single schedule for all residential consumers, with variations in price reflecting the presumptive use of the energy.

Commercial lighting and power service. The utility may develop two commercial schedules, a commercial power schedule and a commercial lighting schedule. If so, the commercial power schedule applies to those commercial consumers whose principal use of energy is for power purposes and only incidentally for lighting; and the commercial lighting schedule is for those whose principal use of energy is for lighting with only incidental use for the operation of motors. If the distinction is made, the commercial lighting rates would normally apply to apartment houses, churches, schools, hospitals, hotels, theaters, display lighting, and similar uses. The commercial power schedule would presumably apply to consumers utilizing energy for motors, refrigerators, cooking, water heating, air conditioning, battery charging, elevators, laundries, X-ray machines, et cetera.

Industrial power schedules. These schedules are normally available only to those whose demand is not less than a specified minimum, perhaps 10 kilowatts. Some industrial power is delivered at normal voltages from the regular distribution lines; other consumers take power from the primary lines at high voltages and are usually charged a lower rate. An industrial consumer may take full service, or he may be taking a limited service such as auxiliary service to supplement his own source of supply, breakdown service to take care of failures in his own equipment, stand-by service in case his usual sources are inadequate, or surplus power service where the consumer takes such surplus power as the utility has to dispose of. A large proportion of industrial consumers are served at special class rates which are limited to a designated category of industry. Class-rate schedules are commonplace for brick plants, mills, dairies, metallurgical plants, electrochemical plants, and other large power consumers. If the utility has few industrial consumers, it may be that special contracts will be negotiated, without the formality of constructing a schedule.

Street lighting. The street lighting service is usually given under a separate schedule. Because both the hours during which the lights are illuminated and their capacity are known in advance, such service is usually supplied at a flat rate per lamp per month.

Other schedules. According to the nature of the market, the utility will

normally have a number of other schedules. There may be a separate schedule for steam railroads or the local transit company. Service to outlying communities and rural districts may be available under the residential schedule or it may be subject to special rates. Some utilities follow the practice of publishing every contract with any individual consumer as a schedule available to other consumers who fall within that category.

PRINCIPAL TYPES OF ELECTRIC RATE SCHEDULES. *The flat rate.* Where a service is supplied under a flat-rate schedule the consumer pays the same sum per unit of time or per unit of electrical equipment, irrespective of the energy used. Many early electric utilities provided residential service at a flat rate, for example, \$4.00 per month. Since the net bill remains the same whatever the consumption, the average rate per kilowatt hour diminishes as the quantity of consumption increases. This is illustrated by Chart No. 1 in Figure 2.

The flat rate is a suitable form only if all consumers occasion approximately the same demand costs and if there are no output costs associated with increased consumption. This form may be justifiable also if the flat rate is proportional to the capacity of the equipment and if the timing of the consumption is known, so that demand, energy, and customer costs can be included in the flat rate.

The common use of the flat rate is found in the schedules for street lighting, for display lighting, and for similar uses. A typical schedule for street lighting might be:

"400 watt lamps burning all night every night—\$4.80 per month.
200 watt lamps burning all night every night—\$4.60 per month."⁶

The advantage of the flat rate lies in its simplicity. When both the magnitude of demand and the energy consumed are known in advance, the flat rate is economical for the company, since the single charge can serve to recover the demand, energy, and customer costs. The utility avoids the expense of installing meters and providing for meter reading; the costs of billing and collection are also usually less. Where the conditions with respect to demand and energy consumption are not known in advance the flat-rate schedule is uneconomic, for it does not provide an accurate allocation of the three categories of cost.

Straight-line meter rates. A straight-line meter rate is one under which a constant charge is made per unit for all energy consumed. Straight-line rates were commonplace in the early days of utility operation when no attempt was made to recognize differences in demand and energy costs. At present the straight-line form is justifiable only where it is possible to include the demand cost in the energy charge. In recent years, some utilities have offered energy at 3 cents per kilowatt-hour for cooking. (See Figure 2, Chart No. 2.) The use of this rate form for cooking is of doubtful propriety because a part of the cooking load tends to coincide with the system peak.⁷ Some companies offer

⁶ *Re City of New London*, P.U.R. 1931E 369, 371 (Wis., 1931).

⁷ Some companies have used the flat rate as a promotional form to encourage the installation of electric cooking equipment. With an increase in consumption, rate reductions make possible the inclusion of the cooking charge in the regular block, or other, rate form.

storage water-heating service at a meter rate, perhaps at 1 cent per kilowatt-hour. This use is justifiable where the equipment is so arranged that the consumer who requires the hot-water service at other than off-peak hours takes that service through a second heating unit attached to his regular meter and pays for the extra service at the regular residential rate.

The advantages of straight-line meter rate as compared with the flat rate are obvious. It recognizes differences in consumption between different consumers and charges each accordingly. By making the charge proportionate to consumption, the consumer is discouraged from wasting the service.

The disadvantages of the straight-line meter rate, for other than the special services where a recognition of demand and customer costs is not important,⁸ have resulted in the restriction of this form to relatively few services. The flat rate does not ordinarily afford an accurate allocation of demand costs, and it does not encourage increased consumption.

Step-meter rates. The step-meter rate represents the next stage in the evolution of rate forms. The step-meter rate offers a price differential for quantity. The consumer pays a uniform charge for each unit of energy for all of his consumption; the charge per unit varies with the consumption during the billing period. The following schedule illustrates the step-meter rate:

- 5.0¢ net per kwh for entire use, when use is 25 kwh or less per month.
- 4.0¢ net per kwh for entire use, when use is 26 kwh to 75 kwh per month.
- 3.0¢ net per kwh for entire use, when use is 76 kwh to 150 kwh per month.
- 2.0¢ net per kwh for entire use, when use is 151 kwh to 250 kwh per month.
- 1.5¢ net per kwh for entire use, when use is 251 or more kwh per month.
- Minimum bill, \$0.50 per month.

This is plotted as Chart No. 3 of Figure 2. Under this schedule the consumer using 20 kilowatt-hours a month would pay 5 cents per kilowatt-hour, or \$1.00. A second consumer taking 70 kilowatt-hours per month would pay 4 cents per kilowatt-hour on the entire consumption, or \$2.80. And a third whose consumption was 175 kilowatt-hours per month would pay 2 cents per kilowatt-hour for the entire 175 kilowatt-hours, or \$3.50.

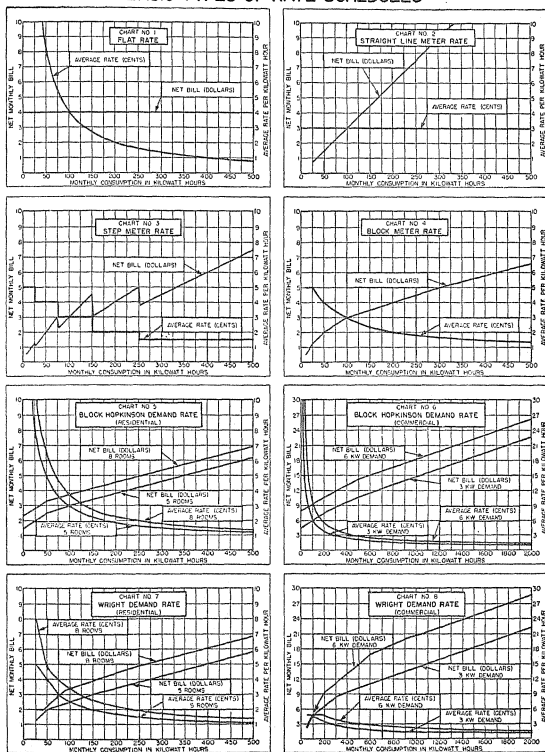
The advantage of the step rate in comparison with the straight-line rate is its recognition of the elasticity of demand for the utility's service. By offering lower rates for larger consumptions, consumers are encouraged to increase their utilization of the service. This form has been used for residence and other general consumers.

The objections to the step rate are apparent when the prices for slightly different consumptions are calculated. In the schedule above, the bill for 75 kilowatt-hours would be \$3.00, while for 76 kilowatt-hours it would be only \$2.28, and the bill would not again be \$3.00 until 100 kilowatt-hours had been consumed. This arrangement results in the most obvious price discrimination: a consumer may take a larger amount of energy and pay a smaller total bill

⁸ An example might be the use of energy during off-peak hours for recharging batteries.

FIGURE 2

BASIC TYPES OF RATE SCHEDULES



Source: Federal Power Commission, *National Electric Rate Book*, p. xi.

despite the fact that he has imposed larger costs on the company. This objection to the step rate led early to a modification which involved setting back the step in such a way that, to use the example given above, all consumptions falling within 25 and 31 kilowatt-hours would be billed at \$1.25, all falling

between 75 and 100 would be billed at \$3.00, all consumptions between 150 and 225 would be billed at \$4.50, and all consumptions between 250 and 333 would be billed at \$5.00. But even this modification does not remove all discrimination, which persists in the sale of different quantities of energy at the same price. A second objection is that it provides no proper recognition for differences in demand costs. The large consumer may actually impose a higher demand cost than the small consumer, and yet the large consumer is billed not only at a lower rate per kilowatt-hour, but he may have exactly the same net bill as the small consumer. Under either the original step rate or under its modification, this method of pricing encourages waste of the utility's service; the consumer who is at the end of one step is encouraged to increase his consumption, either because his total bill will be smaller or because no additional cost is imposed on him. These objections have led to the abandonment of step-rate schedules in favor of the block rate; some states have forbidden their use.

The block rate. The block meter rate charges all consumers the same rate per kilowatt-hour for the same quantity of consumption; but the rate per kilowatt-hour is reduced for consumptions falling within successive blocks. The schedule provides a series of blocks, each a fixed number of kilowatt-hours of consumption, with a uniform rate per kilowatt-hour within each block. The following is a characteristic block meter rate:

- 5.0¢ net per kwh for the first 25 kwh per month.
- 3.0¢ net per kwh for the next 25 kwh per month.
- 2.0¢ net per kwh for the next 50 kwh per month.
- 1.0¢ net per kwh for the next 200 kwh per month.
- 0.8¢ net per kwh for energy in excess of 300 kwh per month.
- Minimum bill, \$0.50 per month.

Referring to Chart No. 4 in Figure 2, it will be seen that the average rate per kilowatt-hour falls with increased consumptions because of the lower rates applicable to the later blocks, the total bill rising at a diminishing rate.

Under this schedule any consumption of 10 kilowatt-hours, or less, per month would be billed at \$0.50, the minimum bill. The method of calculating the bill under the block rate may be illustrated by assuming three consumers—A consuming 40 kilowatt-hours per month, B 120 kilowatt-hours, and C 400 kilowatt-hours. A would pay a total bill of \$1.70; B, \$3.20; and C, \$5.80. The calculation follows on page 339.

The block rate has significant advantages. First, it is simply calculated and easily understood by the consumer. Secondly, it avoids the discriminations involved in charging the same price for different consumptions, or different prices for practically the same consumption. Thirdly, it is a promotional form; the lower charges for additional units of consumption encourage increased use. This promotional feature recognizes the elasticity in the demand for the utility service and at the same time reflects the saving to the utility that comes from a fuller utilization of its capacity. The block rate is built up on the assumption that increased consumption represents a use of the additional energy at off-peak hours.

The weaknesses of the block system of charging are concerned with the

	A		B		C	
	Consumption	Charge	Consumption	Charge	Consumption	Charge
At 5.0 cents	25	\$1.25	25	\$1.25	25	\$1.25
At 3.0 cents	15	.45	25	.75	25	.75
At 2.0 cents	—	—	50	1.00	50	1.00
At 1.0 cents	—	—	20	.20	200	2.00
At 0.8 cents	—	—	—	—	100	.80
Total	40	\$1.70	120	\$3.20	400	\$5.80

allocation of demand costs. Where the consumers (for example, residential consumers) are not homogeneous in their consumption habits, the block rate fails to take account of differences in the demand costs. The large consumption that reaches, for example, 100 or 200 kilowatt-hours may represent a fairly continuous use of a small amount of power, but it will more likely represent a difference in the rate of consumption and, consequently, higher demand costs. Furthermore, the utility is not adequately protected from non-use of the service; the minimum bill of \$0.50 per month is little more than the customer costs and cannot cover the demand costs imposed upon the utility by the larger consumers.

Two-part rate. All of the rate schedules previously described are one-part rates; that is, there is only a single schedule of charges, which purports to cover all of the elements of cost in the rendition of the service. The most serious weakness of these one-part rates has been their failure to provide adequately for the demand costs imposed upon the utility by different classes of consumers or by consumers of the same class having different demands. Two-part rates provide specifically for the demand costs in addition to the charges for the energy costs.

The two-part rate may be in two component parts—a separate demand charge and a separate energy charge, or the demand and energy factors may be combined in a single rate schedule, as in the Wright demand rate. The customers' demands may be determined by measurements for the large consumer, or it may be approximated on the basis of connected load or number of rooms for smaller consumers. The demand charge may be on a straight-line basis, that is, so much per kilowatt of demand, or it may be in a block form, that is, different charges per kilowatt of demand depending upon the amount of the demand. The energy charge may be a straight-line meter rate, a block rate, or some other form. Rates which combine both the kilowatt, or demand, feature and the kilowatt-hour, or consumption, factor are sometimes called "load-factor" rates.

All two-part rates, if properly constructed, have certain marked advantages over one-part rates. First, the important demand costs are explicitly recognized and allocated among the different classes of consumers and, perhaps, among the different consumers within the class. Therefore, the two-part rate is less

likely to present discriminatory features. Secondly, the rate is highly promotional, encouraging the consumer to make additional use of the service; because the demand charge is calculated separately, the energy charge can be quite low. Thirdly, the two-part rate has the advantage, where the minimum bill is the demand charge, of protecting the utility from non-use of the service. The obligation of the utility to hold itself in readiness to meet the demand of each customer imposes heavy capital costs; hence a separate demand charge is not only justified by the conditions of cost but is absolutely essential if the joint costs are to be fairly borne by the different categories of consumers.

The disadvantages of the two-part rate are associated with its complexity. In general, it has been thought by managements that the two-part rate is too complicated for the small residential customer. The two-part rate, however, is in quite general use with large consumers who appreciate the fairness of the demand charge and who respond to the promotional features of the low energy charge. Where the two-part rate is applied to residential consumers, it is usually necessary to estimate the demand on the basis of some readily understandable unit, such as the floor area or the number of rooms. The two-part rate fails to make any distinction between customer cost and demand cost, presumably on the assumption that the customer costs are quite small in relation to the demand costs.

(1) The Hopkinson demand rate. The following schedule, a Hopkinson demand rate, is typical of the application of the two-part principle to residential service:

BLOCK HOPKINSON DEMAND RATE SCHEDULE

(residential service)

- \$0.75 net per month for first two rooms or less
- 0.25 net per month for each room in excess of two rooms; and
- 2.0¢ net per kwh for first 50 kwh per month
- 1.0¢ net per kwh for next 50 kwh per month
- 0.8¢ net per kwh for energy in excess of 100 kwh per month.

A Hopkinson demand rate sets up what is, in effect, a block rate for each individual consumer, the charge for energy units in each block depending upon the individual consumer's demand. For any individual consumer, the average cost per kilowatt-hour increases with an increase in his demand. This is illustrated by Chart No. 5 in Figure 2. Two individuals having the same total consumption may have quite different total bills and quite different average costs per kilowatt-hour because of differences in the demand charges. This may be illustrated by assuming two customers, A and B, consumer A having a house of 5 rooms and consumer B, a house of 8 rooms, and both consuming 100 kilowatt-hours per month. Consumer A's bill is \$3.00 and consumer B's, \$3.75; the former pays an average rate per kilowatt-hour of 3 cents and the latter, an average rate of 3.75 cents. This difference in charges is not discrimination; B should pay a higher charge than A because his demand requires that the company keep a larger capacity available to meet his requirements.

<i>Consumer A</i> (5 rooms; 100 kwh)			
Demand charge			
First 2 rooms	.75		
3 rooms at 25 cents	.75	\$1.50	
Energy charge			
50 kwh at 2.0 cents	1.00		
50 kwh at 1.0 cent	.50	1.50	
Total bill			\$3.00
(Average rate per kwh—3.0 cents)			
<i>Consumer B</i> (8 rooms; 100 kwh)			
Demand charge			
First 2 rooms	.75		
6 rooms at 25 cents	1.50	\$2.25	
Energy charge			
50 kwh at 2.0 cents	1.00		
50 kwh at 1.0 cent	.50	1.50	
Total bill			\$3.75
(Average rate per kwh—3.75 cents)			

Analysis of the Hopkinson demand rate reveals certain weaknesses. Where demand is approximated instead of measured, there is no allowance for differences in the consumption habits of two different consumers. A, for example, may actually keep more rooms lighted simultaneously than does B, so that in fact A may be imposing heavier demand costs upon the utility than B. These imperfections cannot be corrected without a heavy investment in equipment for measuring demand, which is not usually justified in the case of residential consumers.

The Hopkinson rate is used frequently for commercial and industrial consumers. The following is characteristic of the simpler schedules that are used for commercial service:

BLOCK HOPKINSON DEMAND RATE SCHEDULE
(commercial service)

- \$1.50 net per kw per month for first 5 kw demand
- 0.50 net per kw per month for all demand in excess of 5 kw; and
- 1.5¢ per kwh for first 250 kwh per month.
- 1.0¢ per kwh for next 250 kwh per month.
- 0.8¢ per kwh for energy in excess of 500 kwh per month.

Chart No. 6 in Figure 2 depicts the behavior of the total bill for various consumptions with a demand of 3 kilowatts and a demand of 6 kilowatts and the average rate for various consumptions with those demands. In comparison with the residential Hopkinson rate, the commercial rate shows both a higher demand charge and larger energy blocks. The higher demand charge is presumably due to the fact that the commercial demand is more likely to be coincident with the peak demand for the system; and the larger energy block

is a reflection of the fact that increased consumption on the part of the commercial consumer is less likely to result from spreading consumption throughout more hours of the day than from a more intensive use of energy during a limited number of hours. The Hopkinson rates which are used for large power service frequently contain a larger number of blocks for both the demand and the energy charges. This may be illustrated by reference to the large-power-service schedule, a Hopkinson demand schedule, of the Connecticut Light and Power Company, as reported in the discussion of other elements in the electric rate schedule.⁹

(2) Wright demand rates. The Wright demand rate is a form which combines the demand component and the energy component in a single block schedule. In the Wright rate the demand charge is implicit in the higher energy charge for the first blocks of consumption. If there is more than one block to which the high rate applies, as in the following schedule, it would appear that the utility is not completely protected against a non-use of the service by charging as the minimum bill the charge that would prevail for the first block of service. In the Wright demand rate which is given for commercial service the sharp drop from 5 cents in the first block to 2 cents for the next block suggests that a larger proportion of the demand costs have been included in that first block; the larger number of hours of use of the demand required in the case of the commercial consumer presumably adjusts for the previously mentioned fact that there is a greater coincidence between the peak demand for commercial service and the system peak than there is between the residential peak and the system peak.

The following schedule is characteristic of the Wright rates as applied to residential service:

WRIGHT DEMAND RATE
(residential service)

5.0¢ net per kwh for first 5 kwh per room per month
3.0¢ net per kwh for next 5 kwh per room per month.
1.0¢ net per kwh for next 20 kwh per room per month.
0.8¢ net per kwh for all energy in excess of 30 kwh per room per month.
Minimum bill, \$.25 per room.

A most important effect of this schedule is the setting up of rate blocks of different magnitude for different consumers depending upon the size of their demands. In the schedule here given the demand is calculated with reference to the number of rooms. The calculation of the bill for a consumer having a 5-room house and using 100 kilowatt-hours is as follows:

Computation of size of blocks:

First block—5 rooms at 5 kwh	25 kwh
Second block—5 rooms at 5 kwh	25 kwh
Third block—5 rooms at 20 kwh	100 kwh
Fourth block—all in excess of	150 kwh

⁹ *Infra*, p. 344.

Computation of bill	
25 kwh at 5¢ per kwh	\$1.25
25 kwh at 3¢ per kwh	.75
50 kwh at 1¢ per kwh	.50
Total bill, 100 kwh	<hr/> \$2.50

The average rate per kilowatt-hour varies inversely with the consumption and directly with demand. A reference to Chart No. 7 of Figure 2 indicates the relation that prevails between the average rate per kilowatt-hour and the consumption for assumed demands of 8 rooms and 5 rooms. The Wright demand rate has one advantage in comparison with the Hopkinson rate—it relates the size of the energy block more directly to the size of the individual consumer's demand. Referring to the Hopkinson rate for residential service above, it appears that the consumer has to take more than 50 kilowatt-hours per month before his rate is reduced below the 2-cent charge for the initial block, whereas under the Wright rate the size of the initial block depends upon the size of the individual consumer's demand, and in this respect the Wright rate is more promotional. This feature is more clearly apparent in the comparison between the Wright demand rate for commercial or industrial service and the corresponding Hopkinson rate for those services.

Like the Hopkinson rate, the Wright demand rate is extensively used for both commercial and large-power services. The schedule which follows is characteristic for the commercial service:

WRIGHT DEMAND RATE
(commercial service)

- 5.0¢ per kwh for the first 30 hours' use of demand per month.
- 2.0¢ per kwh for the next 60 hours' use of demand per month.
- 1.0¢ per kwh for the next 60 hours' use of demand per month.
- 0.8¢ per kwh for all energy in excess of 150 hours' use of demand per month.
- Minimum bill, 75¢ per kw of demand per month.

In the commercial schedule the minimum bill is figured in terms of kilowatts of demand per month, a more assured protection for the company against non-use of the service.

Three-part rates. The three-part rate, sometimes called a Doherty rate, includes a separate charge for the customer costs in addition to the demand charge and the energy charge. No illustration is required since the addition of a separate customer charge of 50 cents or 75 cents per month to either the Hopkinson or the Wright demand rate converts these two-part rates into three-part rates. Presumably the three-part rate represents a more scientific allocation of costs, since the customer costs are provided for explicitly. Most companies, however, consider this an unnecessary refinement, preferring to include the customer charges in the demand charges.

Other provisions of electric schedules. The description of rate schedules

thus far given has been concerned simply with the rates in the schedule. Most rate schedules contain a number of other provisions, some of which, in the case of the large-power consumers, may involve quite complicated calculations in order to determine the customer's bill. The following schedule is that of the Connecticut Light and Power Company for large-power service:

Applicable: To energy for all heating and power purposes. Incidental lighting permitted up to 30 per cent of the total demand.

Rate: For service at secondary voltage—

Demand Charge:

\$2.80 per kw first	15 kw demand
2.00 per kw next	35 kw demand
1.50 per kw next	250 kw demand
1.25 per kw all over	300 kw demand

Energy Charge:

2.75¢ per kwh first	1,500 kwh
1.45¢ per kwh next	8,500 kwh
1.05¢ per kwh next	40,000 kwh
0.90¢ per kwh next	100,000 kwh
0.80¢ per kwh all over	150,000 kwh

Minimum Bill: The demand charge, plus the charge for energy used, but the utility may require a higher minimum charge when the installation is of large size or is affected by special conditions.

Load Factor Discount: If the consumption in kwh for any month exceeds the product of 300 times the highest 15-minute kw demand during the peak hours of the month, a discount of $33\frac{1}{3}$ per cent on the energy charge for such excess kwh will be allowed.

Transformer Ownership Discount: If the customer takes service at his property line and furnishes all necessary transforming equipment, the following deductions will be made from the demand charges:

15¢ per kw on	first 200 kw demand
5¢ per kw on	all additional kw demand

Primary Metering Discount: If the service is metered at the utility's supply line voltage, there will also be a 5 per cent deduction in the kwh consumption.

Off-Peak Discount: If the demand of the customer during off-peak hours exceeds the demand during peak hours, a discount of $66\frac{2}{3}$ per cent of the demand charge for such excess will be allowed.

The off-peak hours shall be from 8:00 P.M. to 7:00 A.M. on week days; Saturdays after 12 o'clock noon; Sundays and holidays; and such other hours as the utility may establish from time to time. All other hours shall be peak hours.

Fuel Clause: The energy charge will be increased or decreased by 0.00075¢ per kwh for each 1¢ increase, or decreased, in the delivered cost of fuel above \$5.25, or below \$4.75 per net ton. The weighted average cost of coal used in any consecutive 3-month period will determine the

amount of the increase or decrease in the energy charge for the next succeeding month.

Determination of Demand. The billing demand will be determined by measurement and will be the highest 15-minute demand in the month, except that such demand for small installations will be determined by agreement with the customer or by test under full load operating conditions.

When determined in any other way than by continuous measurement, such demand will continue in effect until a new demand is created.

For billing purposes the demand during peak hours shall be corrected for power factor as hereinafter set forth, but shall not be less than 60 per cent of the highest demand, corrected for power factor, occurring during the peak hours of the preceding 11 months.

Where the customer's requirements during the winter or heating season (Oct. 15 to Apr. 15) are less than during the non-heating or summer season (Apr. 15 to Oct. 15), either because of seasonal character of use, or the operation of heat balance equipment, the minimum demand for billing purposes shall be separately applied for each season.

Power Factor: If the service is taken at a power factor of less than 80 per cent at the time of maximum demand, or less than 70 per cent average, the demand for billing purposes shall be increased at the rate of 1 per cent for each 1 per cent the lagging power factor is less than such amount.

If the service is maintained at a power factor of more than 85 per cent, the demand for billing purposes shall be decreased 1 per cent, for each 1 per cent the power factor is maintained over 85 per cent up to 90 per cent.

When the service metered is at the utility's line voltage, an equitable adjustment will be made to reflect the power factor of the load, rather than the load and the transformers.

The utility will determine the power factor monthly by continuous measurement, or at reasonable intervals by test, and if determined by such test, the determination shall continue in effect until a new determination is made.¹⁰

Each of the above features of the electric schedule may be briefly considered.

(1) The minimum bill. Most electric rate schedules contain a minimum-bill feature. Its purpose is to protect the utility against a non-use of the service or against a use insufficient to cover both the demand and the customer costs. Theoretically, the minimum bill should be sufficient to cover both costs, but practically the minimum bill is usually less because of consumers' opposition to minimum charges.¹¹

¹⁰ Federal Power Commission, *National Electric Rate Book, Connecticut*, Schedule No. 31 (issued Aug. 10, 1939).

¹¹ The consumer who fails to understand that he has imposed certain costs on the utility even though he takes no service often looks upon the minimum bill as requiring him to pay something for nothing.

(2) Load-factor discount. The load factor is the ratio of the actual kilowatt-hours consumed to the possible kilowatt-hours that would have been consumed had the maximum demand been used continuously throughout the period. Load factor is significant primarily with respect to the demand charge. Customers with a 100 per cent load factor cannot have any diversity of demand with respect to other customers either in the same category or in other classes; consequently, they should pay the full cost of the capacity required to serve them. Even where consumers have a load factor of 50 per cent there is practically little opportunity for diversity with other consumers. In general, the higher the load factor the lower the diversity, and in consequence, the higher the load factor the higher the justifiable demand charge. In the large-power service schedule, given above, a special discount is allowed where the consumption is 300 times the highest 15-minute kilowatt demand during the peak hours of the month; the maximum possible consumption would be 720 hours of use; in other words, the discount is available to those having a load factor of approximately 40 per cent or more. This discount has the effect of giving the power consumer the advantage of the diversity arising from the fact that most of his consumption comes off the peak of the system.

(3) Transformer ownership discount. Where large consumers own their own transformers and supply the facilities which bring the energy from the company's lines to the point of consumption, the utility may recognize the saving thereby effected by granting the consumer a special discount.

(4) Primary metering discount. A large consumer may have the meters to measure his consumption installed at the point where his line connects with the utility's supply line. In this situation the customer will sustain any of the energy losses that occur between the meter and the point of consumption. Since such line losses normally fall upon the company, the utility may make an appropriate adjustment in the calculation of the consumer's energy consumption.

(5) Off-peak discounts. In order to build up a demand for service and to achieve full utilization of capacity, the company naturally seeks to encourage off-peak consumption. This may be stimulated by offering special class rates to consumers who will take power during non-peak hours, or the same objective may be achieved in the case of consumers already taking power by offering an off-peak discount. In the above schedule, the off-peak discount amounts to two-thirds of the demand charge, to the extent that the demand charge during the off-peak hours exceeds the demand during the peak hours. It is customary for the schedule to define the off-peak hours.

(6) Fuel clauses. Fuel clauses came into prominence during the wartime period of high prices. The output costs of utilities using coal or other fuel in the production of their service are extremely sensitive to changes in fuel prices. The utility has two alternatives: it may either set the output, or energy, charge at a sufficiently high level to cover possible variations in fuel cost and trust that the regulatory authorities will permit changes in rates before changes in fuel costs leave the company with a loss, or it may seek to provide for automatic variations in rates in response to changes in fuel costs. The latter is favored, not only because it assures meeting changes in operating costs, but

also because it enables the utility in normal times to offer a lower rate and thereby secure competitive business that might not otherwise become available. The second advantage is especially important in the industrial-power field, where small changes in the price may determine the policy of a potential industrial consumer to retain or abandon its own generating equipment. Since it is not advisable that the rates fluctuate at every change in the price of fuel, the schedule usually provides that the price of fuel, for purposes of making the adjustment, shall be determined on the basis of a moving monthly average.

(7) Power factor. The power factor is the ratio of the actual energy in kilowatt-hours to the apparent energy in kilovolt-ampere hours. Most electrical utilities furnish alternating current. The operation of electric motors of the induction type, particularly when the motors are small and underloaded, results in a low power factor. In the operation of induction motors the alternating current is commonly out of phase with the voltage used to operate the motor, and only this reduced current takes part in recording on the meter the power used by the consumer. The utility is anxious to maintain a power factor as near to unity as possible; such a power factor would enable the utility to bill consumers for all of the power which it could send out, and also a low power factor calls for a substantial addition to the investment in electric generating, transmitting, distributing, and metering equipment. The low power factor also causes higher operating expenses; and if it falls too low, the low power factor may result in poor quality service for consumers taking energy for the operation of motors.¹²

In the preparation of rate schedules for commercial and industrial consumers, it is customary for electric companies to make provision for a power-factor correction. This serves a dual purpose: it seeks to assess the cost of a low power factor on consumers who are responsible for it, and at the same time to relieve customers having a high power factor from what would otherwise be an excess demand charge; and secondly, it seeks to encourage consumers to use synchronous motors or to take other corrective measures to maintain a high power factor. It is cheaper for the consumer to install equipment that will maintain a high power factor than it is for the utility company to attempt to control the situation through its own equipment. An adjustment in rates sufficient to make it worth while for the consumer to install equipment that will maintain a high power factor is less than the saving in cost to the utility that results from having the high power factor; therefore, it is possible by a

¹² The unit of power for electricity is the kilowatt. Technically, the watt is the product of volts (electrical pressure) times amperes (the current). In the form of an equation,

$$\text{Watts} = \text{Volts } (E) \times \text{Amperes } (I).$$

The electrical energy for which the consumer pays is a product of power through time; that is

$$\text{Energy} = \text{Power} \times \text{Time} = \text{Kilowatt-Hours} = \text{Kilovolt-Ampere-Hours}.$$

Power factor, the ratio of kilowatts to kilovolt-amperes, or the ratio of kilowatt hours to kilovolt-ampere-hours, should ideally be unity; that is—power factor (sometimes cosine θ =

$$\frac{\text{kilowatts}}{\text{kilovolt-amperes}} = \frac{\text{kilowatt-hours}}{\text{kilovolt-ampere-hours}} = 1.$$

θ is the angle of lag between the voltage and the current (amperes).

Sometimes this unity is destroyed for *alternating* current, and when this happens the "current," or amperes, lags behind the "pressure," or volts—the curves for the amperes and volts are no longer "in phase." The cosine of the angle of the lag is the power factor. In the diagrams be-

rate adjustment to improve the service and share the benefits between the consumers and the company.

In establishing a power-factor correction in rate schedules it is customary for the company to assume a certain standard power factor, such as 80 or 85 per cent, and to reward those consumers who maintain a higher power factor and impose an additional charge on those whose power factor falls below the standard.¹³

Optional rates. A number of electric and gas companies have utilized a so-called optional rate in introducing more promotional features into their rate schedules. The utility offers two rates, and the consumer may elect under which rate he will take the service. Usually the second, or optional, schedule imposes higher rates for smaller consumptions and lower rates for larger consumptions; that is, the utility company offers lower rates to large consumers. But if in any period he falls below the "crossing point" between the two schedules, the large consumer pays a higher rate than he would have paid on the original or basic rate. The schedules below indicate the optional rates offered to gas consumers by the Long Island Lighting Company.¹⁴

Rate I

First 3,000 cubic feet per month—\$1.75 M. cu. ft.

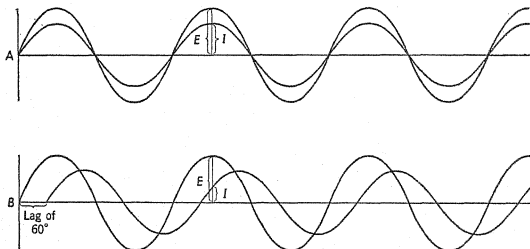
Next 3,000 cubic feet per month—\$1.50 per M. cu. ft.

All over 6,000 cubic feet per month—\$1.30 per M. cu. ft.

Minimum charge \$1 per month.

Terminable by customer in 3 days' notice.

low, *A* indicates no lag, the curves are in phase and the power factor is 1; *B* indicates a lag of 60 degrees and consequently, the power factor (cosine 60°) is 50 per cent.



In *A* the power consumption is strictly the product of $E \times I$ but in *B*, although *E* and *I* are of the same magnitude as in *A*, the power consumption is less than $E \times I$; it is actually $E \times I \times \cosine \theta$. In the assumed example it is 0.50 ($E \times I$) because the volts and amperes are 60° apart in phase. And since the meter registers kilowatt-hours, the utility is able to charge only for the energy effectively delivered to customers.

¹³ Federal Power Commission, *Electric Rate Survey, Rate Series No. 4, Rates for Electric Service to Commercial and Industrial Consumers*, pp. 11-12.

¹⁴ *Re Long Island Lighting Co.*, P.U.R. 1931D, 353-354 (N.Y. 1931).

Rate II

First 200 cubic feet or less per month—\$1.00

Next 4,800 cubic feet per month—\$1.50 per M. cu. ft.

All over 5,000 cubic feet per month—\$.90 per M. cu. feet.

Minimum charge \$1 per month.

Terminable *after one year* on 3 days' notice.

The tabulation shows the calculation of the bills for various consumptions at the two rates.

<i>Consumption cubic feet</i>	<i>Rate I</i>	<i>Rate II</i>	<i>Increase</i>	<i>Decrease</i>
0	\$ 1.00	\$ 1.00	—	—
200	1.00	1.00	—	—
600	1.05	1.60	\$.55	—
1,000	1.75	2.20	.45	—
1,600	2.80	3.10	.30	—
2,000	3.50	3.70	.20	—
2,400	4.20	4.30	.10	—
2,600	4.55	4.60	.05	—
2,800	4.90	4.90	—	—
3,000	5.25	5.20	—	\$.05
3,500	6.00	5.95	—	.05
4,000	6.75	6.70	—	.05
5,000	8.25	8.20	—	.05
6,000	9.75	9.10	—	.65
10,000	14.95	12.70	—	2.25
15,000	21.45	17.20	—	4.25
20,000	27.95	21.70	—	6.25

The utility assumes no responsibility with respect to the customer's selection of the rate. The customer is expected to estimate which schedule will be to his advantage. An inspection of the tabulation reveals that those consuming 2,800 cubic feet of gas, or less, should choose to take service under Rate I; while the larger consumers will find it less expensive to take service under Rate II. The customer must choose which schedule shall apply in advance of his consumption, and he may not change from the new schedule to the old within a year.

The question is naturally suggested as to why the utility should introduce an optional rate schedule when it would be possible to design a single rate schedule which would be just as effective in stimulating increased consumption without presenting consumers with the complicated choice that the optional schedule always involves. In the example cited, the schedule might be constructed so that Rate I would apply to consumptions under 2,800 cubic feet and Rate II to all larger consumptions. The use of optional rates has certain drawbacks for the utility—complications in billing and the dissatisfaction of

consumers who discover that they have chosen the more costly schedule. The reason for its adoption is the company's unwillingness to make the promotional rate available to consumers who may take less than the consumption indicated by the crossing point between the two schedules unless it may charge higher rates when the consumption falls below that volume. For example, if a consumer who is consistently consuming more than 2,800 cubic feet chooses Rate II, as he should, the utility is quite willing to give him the benefit of the lower rate. But the company is not willing to give a second consumer the benefit of the lower rate during those months when his consumption is high if in certain months his consumption falls below 2,800 cubic feet.

Chairman Maltbie of the New York Public Service Commission has questioned whether regulatory authorities should sanction the use of optional rates. It is difficult for the consumer to determine in borderline cases which schedule is the more favorable, and a mistaken choice breeds dissatisfaction. To charge two consumers different prices for an identical service involves discrimination, which is not justified simply because the consumer paying the higher rate in one month is perhaps charged a lower rate in another month. Moreover, the optional rate works no such change in the consumption as to enable the company to effect any saving, either in capital costs or in operating costs. The cogency of these criticisms has been widely recognized, and the optional rate has had a waning popularity. At present the optional rate is used more commonly by electric utilities than by gas companies, but both utilities have found their purposes more effectively served through the adoption of the objective-rate plan.

The promotional rate. Utility companies, especially the electrical utilities, have resorted to various devices to encourage increased consumption of their service in an attempt to reduce overhead costs per unit (by achieving a fuller utilization of their productive capacity) and to increase their earnings. The problem has been largely one of finding what form of rate reduction would prove most effective in encouraging increased consumption. In the preceding description, it was noted that certain rates possess promotional features which others lack.

In the block-rate schedules, the lower rates applicable to the larger blocks of consumption have the effect of making service available for uses which would not be justified at the higher rates applying on the earlier blocks. A two-part rate is always promotional because the consumer is required to pay the demand costs irrespective of how much energy he takes and, therefore, the cost of additional increments of energy appears a quite small proportion of his bill. The optional rates represent another attempt to introduce promotional features into the rate schedule.

The most effective promotional feature is always a rate reduction: the demand for utility service with respect to most classes of consumers is elastic, and rate reductions are usually followed by increased consumptions and commonly by enlarged net revenues. However, there is always a delay in the response of consumers to rate reductions, and managements can never be sure of just how effective the increase in consumption will be in offsetting the price reductions. Managements, therefore, naturally hesitate to offer rate reduction

unless the company is already enjoying a substantial excess income. Some device has long been needed by which the essential revenues of the company may be protected, while consumers are offered lower rates and stimulated to increase their consumption. The most successful device to accomplish these two objectives, the most promising promotional rate, is the objective-rate plan.

In some instances, increased consumption depends upon the consumer having electric equipment of various sorts—refrigerators, electric ranges, irons, toasters, percolators, hot-water heaters, et cetera. Most companies have sought to build their market through encouraging their consumers to purchase and use electrical equipment, perhaps by offering free installations or by selling expensive equipment at reduced prices and on a deferred-payment basis. Other companies have made rate reductions with the expectation that consumers would acquire the electric-using equipment as the operating costs were reduced. Those companies that have been most successful in building profitable loads have used both plans, recognizing that rate reductions alone are ineffective where consumers lack the financial means to acquire equipment and that the sale of appliances will not meet a ready response unless their operation appears to be economical.

The objective rate. The objective-rate plan was first introduced by the Alabama Power Company on October 1, 1933. The success of the plan led to its adoption by other companies until at present it is extensively used as a device to protect the revenues of the utility while promoting increased consumption through the offer of lower rates. At first the objective rate was applied to residential service, where increases in consumption were particularly desired, but the success of the plan has led to its application to other classes of service.¹⁵

The objective-rate plan operates with two rate schedules in effect simultaneously. Unlike the optional-rate plan, the objective rate requires the consumer to make no choice; the lower promotional, or objective, rate takes effect automatically for those consumers that increase their consumption by the requisite amount. The two schedules are called respectively the "immediate rate" and the "objective rate." The immediate rate applies to all consumers who do not increase their consumption sufficiently to qualify under the objective rate. The immediate rate may represent a reduction in price in comparison with the schedule that prevailed prior to the adoption of the objective-rate plan, or the immediate rate may continue in effect the schedule under which all consumers were taking service before the plan was announced. The purpose of the plan is to encourage consumers to increase their use of the utility's service by offering lower rates to those whose enlarged consumption offsets the reduction in price. The introduction of the objective-rate plan is usually utilized by the company to introduce more highly promotional rates than those in effect. The change to a more promotional form may raise the charge in the earlier blocks, and to apply the objective rate to all would cause the smaller

¹⁵ *Re Alabama Power Co.*, 3 P.U.R. (N.S.) 355 (Ala., 1933). This first objective-rate plan resulted from a state-wide investigation initiated by the Alabama Public Service Commission. The Commission was convinced that certain rates, particularly the residential rates, should be reduced, although the depression had seriously reduced the company's revenue. Under the direction of the Commission, engineers of the Commission and of the company jointly worked out the program which, as modified, became the first objective-rate plan.

consumers to pay higher charges, to the detriment of good public relations.

The objective-rate plan was really born of the necessities of the depression. The utilities were faced with a demand for rate reductions at a time when their revenues were thought not to justify further reductions. At the same time, the companies did have surplus capacity with which to supply increased service and they could afford to supply this additional service at the lower cost. To meet the demand for lower rates, to protect the revenues of the utility companies, and to bring about a utilization of idle capacity with its concomitant reduction in unit costs were the goals of the objective-rate plan.

The objective-rate plan can best be explained by reference to a particular schedule. The following are schedules for residential service by the Georgia Power Company:

Rate:

Immediate Rate (A-3):

\$1.11	for first	15 kwh, or less
5.00¢ per kwh	next	50 kwh
2.22¢ per kwh	next	135 kwh
1.39¢ per kwh	next	500 kwh
1.11¢ per kwh	all over	700 kwh

Objective Rate (A-5):

\$1.11	for first	20 kwh, or less
5.00¢ per kwh	next	20 kwh
3.33¢ per kwh	next	40 kwh
2.22¢ per kwh	next	120 kwh
1.39¢ per kwh	next	500 kwh
1.11¢ per kwh	all over	700 kwh

Determination of Bill:

- (1) A *base bill* for each month of the year will be established. For present customers the *base bill* will be the amount actually paid during the corresponding month of the year ending June 1, 1939. Customers connected since June 1, 1939, and new customers, will be billed for 12 months on the Immediate rate. The bills for these months will thereafter be the *base bills*.
- (2) No *base bill* shall exceed \$8.00, net.
- (3) The customer will be billed under the Immediate rate for his current month's consumption when the bill thus computed is equal to or less than the *base bill*.
- (4) The customer will be billed under the Objective rate when the bill thus computed is greater than the *base bill*.

- (5) The *base bill* applies when the bill under the Immediate rate is greater than the *base bill*, and when the bill under the Objective rate is less than the *base bill*.¹⁶

The determination of the individual customer's bill requires four steps:

(1) A base bill is calculated for each month of the calendar year. This base bill is the amount which the consumer actually paid in the corresponding month of the year preceding the introduction of the plan. New customers are required to take service under the immediate rate for one year in order to establish base bills. In order to simplify the calculation of customer's bills, there is sometimes inserted in the schedule a so-called "stopper"—for example, the schedule may provide as a lower "stopper" that the minimum base bill shall be calculated with respect to thirty kilowatt-hours' consumption. The establishment of a lower "stopper" has the effect of denying the benefits of the plan to those consumers in the smallest consumption group. The Georgia Power Company's objective rate provides for an upper "stopper" of eight dollars. This upper "stopper" grants the benefits of the plan to those large consumers who are already taking sufficient energy so that their bill at the immediate rate is eight dollars; that is, they may have the benefit of the objective rate whenever their bill at the objective rate is more than eight dollars, even though their base bill, determined according to the amount actually paid in the base month, would have exceeded eight dollars.

(2) The consumer's bill is calculated at the immediate rate.

(3) The consumer's bill is calculated at the objective rate.

(4) If his bill at the immediate rate is less than the base bill, the consumer pays for his actual consumption at the immediate rate. If his bill on the objective rate exceeds the base bill, the consumer pays for his actual consumption at the objective rate. If the consumer's bill at the immediate rate is in excess of his base bill and if his bill at the objective rate is less than his base bill, he pays the base bill.

The objective rate offers reductions to those who increase their consumption sufficiently. The amount of the reduction is indicated by a comparison of the bills calculated at the two rates.

<i>Consumption</i>	<i>Immediate Rate Net Bill</i>	<i>Objective Rate Net Bill</i>
15 kwh	1.00	1.00
40 kwh	2.125	1.90
100 kwh	3.95	3.50
200 kwh	5.95	5.50
500 kwh	9.70	9.25
700 kwh	12.20	11.75

Objective-rate plans are almost invariably announced with a time limit; that is, after a certain date the immediate rate is withdrawn and the objective

¹⁶ Federal Power Commission, *National Electric Rate Book*, Georgia, p. 1 (issued May 10, 1940).

rate becomes the sole rate. The time interval depends upon how long it is expected to be before consumers increase their consumption in response to the objective-rate offer. Two years is a normal term for an objective-rate plan.

Despite what would appear to be obvious advantages, the objective-rate plan has not been without its critics. The introduction of the lower stopper has been criticized as excluding from the benefits of the plan small consumers whose consumptions most need to be stimulated. Two justifications are offered for the lower stopper: the saving in billing costs, and the fact that the stopper may make it possible to offer a lower objective rate than would otherwise be feasible. The objective-rate plan has been criticized as discriminatory against those who are already good consumers. Those who have already adopted electricity for refrigeration, cooking, and other uses and who are already highly profitable customers are denied the rate reduction in the objective schedule. This criticism loses some of its force where an upper stopper is provided at a reasonable level. In defense of the objective-rate plan it may be noted that any discrimination with respect to large consumers is only temporary; they will obtain the benefits of the rate reduction when the designated time period lapses. Any such temporary discrimination must be weighed against the advantages which the plan offers to the majority of consumers. Without permitting the utility company to continue in effect the immediate rate, the company would presumably be unable to offer any rate reduction at all. Finally, the objective-rate plan may be too successful in stimulating consumption and may require the company to add to its productive capacity. Since this is a possibility, the scale of charges in the objective rate should not be so low as to fail to cover all of the costs of service, including the overhead costs.

The advantages of the objective-rate plan are patent. First, the use of the objective-rate plan permits the utility to offer rate reductions which could not otherwise be granted, for the company is assured that its revenues will be maintained until the increase in consumption permits a transition to the objective rate schedule without imposing a loss. Secondly, the plan has been successful in stimulating increased consumption. Thirdly, the objective rate has produced a reduction in unit costs as a result of increased consumption, and these reductions in costs pave the way for further rate reductions. The plan would seem to provide the *modus operandi* whereby consumers may obtain the benefits of progressive rate reductions, the utility companies the gains of reduced unit costs, and investors the assurance of stable revenues.¹⁷

5. GAS RATES

INTRODUCTION. The rates of gas utilities have not exhibited the same variety and complexity that have characterized the rates of electric companies. Although the same general conditions of cost prevail for the gas utility as for the electric utility—demand costs which are proportional to the capacity of the systems, output costs which depend on the amount of the gas delivered, and customer costs—the demand costs (the principal source of complexity)

¹⁷ A significant study of the results obtained by objective rates is *The Objective Rate Plan*, by W. F. Kennedy.

apply more to storage capacity and the distribution system of the gas utility than to its manufacturing capacity, for the gas company can manufacture on a reasonably uniform twenty-four-hour basis and store gas to meet its peak demand. The consumers of gas do not divide themselves naturally into as many classes as prevail for electric consumers, and there is, therefore, no need for the same multiplication of rate forms. Furthermore, the gas company meets much competition in the sale of its service with the result that it does not have the same freedom in the development of differential charging that an electric company has. Gas has lost virtually all of its lighting market; the low price of fuel oil seriously limits the market for cooking and heating purposes; even the industrial consumer may insist on "competitive" rates if he is able to take care of his own requirements.

FORMS OF GAS RATES IN USE. The rate forms which gas utilities have utilized fall into the same categories that have been described for the electric utilities. The manufactured-gas utilities, because of the higher level of their charges, have been somewhat more progressive in the development of promotional rate forms than the natural-gas companies. The simple block form accounts for 33.2 per cent of the manufactured-gas schedules and for 49.6 per cent of the natural-gas rates. Block rates with a small initial block, a more promotional form, constitute 38.0 per cent of the manufactured-gas rates and 25.3 per cent of the natural-gas schedules. The simple straight-line meter rate is still important, being used in 8.1 per cent of the manufactured-gas, and 15.6 per cent of the natural-gas, schedules. Demand rates are used in 14.6 per cent of the manufactured-gas schedules and in only 3.7 per cent of those for natural gas. Schedules involving the use of the service charge have been unpopular, being employed in only slightly more than 5 per cent of the schedules. The step rate has been completely dropped from use.¹⁸

BLOCK RATES. Throughout the recent history of the gas industry the block rate, either with or without a small initial block, has been the prevalent rate form. Both of these forms are illustrated in the standard rate and the optional rate for domestic service:

STANDARD BLOCK RATE

Minimum bill—\$1.00 per month

First 1,000 cu. ft. per month at \$2.35
gross, \$2.25 net per M cu. ft.

Next 2,000 cu. ft. per month at \$2.20
gross, \$2.10 net per M cu. ft.

Next 7,000 cu. ft. per month at \$2.05
gross, \$1.95 net per M cu. ft.

Over 10,000 cu. ft. per month at \$1.85
gross, \$1.75 net per M cu. ft.

OPTIONAL BLOCK RATE

First 500 cu. ft. or less per month,
\$2.75 per month.

¹⁸ American Gas Association, *Proceedings*, 1938, pp. 25-26. All figures are for the year 1938.

Next 1,500 cu. ft. per month at \$1.60
gross, \$1.50 net per M cu. ft.
Over 2,000 cu. ft. per month at \$1.35
gross, \$1.25 net per M cu. ft.¹⁹

The standard block rate above represents a simple block schedule whose promotional features are dependent wholly upon the size of the block and the rate at which the price per thousand cubic feet diminishes. The larger the block, the less promotional the rate; and the smaller the price decline, the less promotional the rate. The weakness of this standard block form is not only its lack of inducement to increased consumption, but its failure to protect the company from non-use or small use of the service.

The optional block rate is typical of the block form that makes use of the small initial block. The consumer takes his first 500 cubic feet at the rate of \$5.50 per thousand cubic feet; and beyond the first block the rate drops to \$1.50 per thousand cubic feet. The introduction of the small initial block performs two functions. The high rate for the first small block is in effect a demand charge, and helps to assure the company that it will recover its costs even from the small consumer. Provided the level of rates is accurately adjusted to costs, this rate form affords a more accurate allocation of costs between different consumers than the simple block schedule. Secondly, by reason of the high charge for the small initial block, the company is able to offer truly promotional rates. Such a rate form is better calculated to preserve the company's existing market or to permit it to enlarge its market.

TWO-PART RATES. Gas utilities have made less extensive use of the two-part, or demand, rate than have the electric companies. In many market situations where the electric company has used the two-part rate, the gas company has used the block rate with the small initial block, preferring the latter's simplicity. The following is a two-part rate:

Demand charge:

First 1,000 cu. ft. of hourly demand—\$6.00 per 100 cu. ft.
Next 4,000 cu. ft. of hourly demand—\$2.50 per 100 cu. ft.
All over 5,000 cu. ft. of hourly demand—\$1.00 per 100 cu. ft.

Commodity charge:

First 500 M cubic feet per month—60¢ per M cu. ft.
Next 500 M cubic feet per month—50¢ per M cu. ft.
Next 1,000 M cubic feet per month—45¢ per M cu. ft.
All over 2,000 M cubic feet per month—40¢ per M cu. ft.

Minimum charge:

Bill resulting from application of actual demand together with a consumption of 2,500,000 cubic feet, both at rates as above.²⁰

This schedule was designed for the large industrial consumer. It will be noted that the demand is expressed in terms of thousands of cubic feet of

¹⁹ *Re Peoples Gas Company*, P.U.R. 1932D, 401 (Wis., 1932).

²⁰ *Re Syracuse Lighting Co.*, P.U.R. 1932D, 285, 293 (N.Y., 1932).

hourly demand and that the minimum bill indicates a very high consumption. The promotional character of the schedule follows from the high demand charge in combination with the low commodity charge.

SERVICE-CHARGE RATES. Some gas companies make it a practice to include a service charge which, taken in conjunction with the remainder of the rate, may make the rate schedule a two-part or a three-part rate. In general, the service charge has been fixed at a conventional sum, commonly less than a dollar. Since it has not usually been established with reference to the consumer's demand for the service, it may be said that the service charge is more a customer charge than a demand charge. Rate forms utilizing service charges have declined in recent years in favor of other forms, notably the block rate with the small initial block. The trend away from the service-charge rate has been due to the unpopularity of this type of rate with consumers.

MINIMUM CHARGES. The minimum charge has been a characteristic feature of gas rates. Its purpose is to assure that the company will be recompensed for those costs which are incurred irrespective of the amount of the consumer's consumption. These are the customer costs and the demand costs. In general, the minimum bill, except for the large industrial consumers, is not set at a sufficiently high level to recompense the company for both the customer and demand costs.

CHARGES ON THE THERM BASIS. During their early years, gas companies supplied gas chiefly for lighting purposes and the gas was judged in terms of its illuminating quality. With the loss of the lighting market, the heat content of the gas became more important. Gas utilities continued, nevertheless, to charge on the basis of the cubic feet delivered rather than on the basis of the heating quality. The qualitative standards were, however, defined in terms of the B.T.U. (British thermal units) content. The introduction of natural gas into communities that had previously been served by manufactured gas presented the companies with a serious pricing problem where there had to be an increase in the charge on the cubic-foot basis. Since the B.T.U. content of natural gas is normally greater than that of manufactured gas, the apparent rate increases were usually in reality rate decreases. In order to avoid giving the impression that rates were being increased, some gas companies sought to construct their schedules with the therm as a unit.²¹

Such a changeover from the conventional to the therm method of charging was proposed by the Syracuse Lighting Company when it introduced natural gas into its territory. It had been selling manufactured gas with a heat content of 537 B.T.U. per cubic foot, and it proposed to sell a mixture of artificial and natural gas having a heat content of 875 B.T.U. The rate prior to the change had been \$1.13 per thousand cubic feet, and it was proposed that the rate should be \$1.86 for the first block exclusive of the initial charge; that is, the company proposed to increase the heat content per thousand cubic feet by approximately 47 per cent; measured in terms of heat content, instead of terms of cubic feet, the proposal offered a price reduction. In order to avoid the un-

²¹ The therm is defined as one hundred thousand British thermal units (B.T.U.). The British thermal unit, the standard unit for gas, is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit at or near its point of maximum density (39.1° F.)

favorable public reaction that would have resulted from an apparent increase in price, the company proposed to substitute a schedule on a therm basis for the schedule on the conventional cubic-feet basis. These schedules were as follows:

SCHEDULES PROPOSED

Applicable to Use of Service for All Purposes District I

Net Rate:

First 2.5 therms or less per month—50¢.

Next 20.0 therms per month—19¢ per therm.

Therms in excess of 22.5 therms per month—13¢ per therm.

Minimum charge—50¢ per month.

EXISTING SCHEDULES

Applicable to Use of Service for All Purposes District I

Net Rate:

First 20,000 cubic feet per month—\$1.13 per M.

Next 80,000 cubic feet per month—\$1.05 per M.

Next 200,000 cubic feet per month—85¢ per M.

Next 700,000 cubic feet per month—80¢ per M.

Next 1,000,000 cubic feet per month—75¢ per M.

Over 2,000,000 cubic feet per month—46¢ per M.

Minimum charge—50¢ per month.²²

Since the meters in use recorded consumption in terms of cubic feet, the Commission feared that the consumer might be confused by the transition. However, the company was permitted to institute the therm basis of charging, but it was required to express its charges in both cubic feet and therms, and to show on the consumer's bill the calculation on both bases.²³

SPECIAL RATES. Gas companies, more than other utilities, have experienced sharp differences in the rates of consumption between the peak periods and the off-peak periods. In recent years the gas companies in their search for additional revenue have sought to develop a market for their off-peak capacity through offering special rates to particular classes of consumers. House heating, air conditioning, refrigeration, and industrial uses have been the most promising prospects for absorbing the idle capacity of the industry and bringing much-needed revenue. Limitations of space do not permit the presentation of examples of each type of schedule offered for these special services. Since the use of gas for space-heating promises to become increasingly important, the following space-heating schedule is offered as an illustration:

²² *Re Syracuse Lighting Co.*, P.U.R. 1932D, 285, 292-293 (N.Y., 1932).

²³ *In Re Binghamton Gas Works*, P.U.R. 1933E, 480 (N.Y., 1933), the Public Service Commission expressed satisfaction with the results that had been obtained with the application of the therm rates during an experimental period.

SPACE-HEATING RATE

Character of Service:

Who may take the service: This rate is offered only to customers who do substantially all of the space heating required on their premises with gas. It is offered for space heating only, and not for general purposes, except that a domestic customer may take all of the gas required for the residence under this rate provided that gas is used as the principal fuel for space heating.

Hours of Service: 24 hours.

Rate: 55¢ per 1,000 cubic feet.

Discount: 5¢ per 1,000 cubic feet, for prompt payment.

Minimum Charge: \$5.50 per month, less 50¢ per month for prompt payment for the months November to April inclusive and 80¢ per month, less 5¢ for prompt payment for the months of May to October inclusive.

Billing: Monthly by meter; or, at the option of the customer, monthly at $\frac{1}{12}$ of the company's estimate of the customer's annual bill. Included with the 12th estimated bill, or the final bill, will be such adjustment as may be necessary to bring the annual estimated bill into agreement with the annual meter bill.

Contract: Number 35. Term: One year and thereafter from month to month until terminated by three days' notice by either party.²⁴

It will be noted that while the contract appears to be relatively complicated, the schedule itself is extremely simple. A straight-line meter rate is an acceptable form for space heating, since the inducement of the promotional feature of the rate depends upon the level of the charge, not upon subsequent reductions for larger consumption. Indeed, larger consumptions would not be encouraged by offering lower rates for successive blocks of consumption since the consumption of gas for heating purposes is regulated automatically by thermostatic control according to the temperature desired. The minimum charge is not significant for the consumer because under nearly all circumstances his bill would be in excess of the minimum as long as the heating apparatus was operated. The arrangement for billing at the rate of one-twelfth of the estimated annual bill per month is designed to make the service more attractive, since the relatively high consumptions during the colder months cause the service to appear unduly costly. Such adjustments in billing are of further importance because the price of manufactured gas for heating purposes is not yet down to the level where it is truly competitive with other fuels.

6. WATER RATES

The costs of water utilities are analogous to those of gas companies. The investment necessary to care for the peak demand is investment in distribution and pumping equipment primarily and to a lesser degree in storage equipment.

²⁴ *Re Detroit Edison Company*, 15 P.U.R. (N.S.) 222, 223 (Mich., 1936).

Water rates lack the promotional emphasis that is so prominent in the rates of other utilities. In order to supply an increased demand for water, the unit cost for the additional supply is often appreciably higher than the cost for the smaller supply. The water company is, therefore, not so anxious to offer low rates and place itself in the position of having to make heavy capital investments upon which it may thereafter earn a return only with difficulty. The fact that many of the water systems are operated by municipalities may also explain the absence of promotional features with respect to rates. Even though capacity costs, or demand costs, are significant elements in the cost of supplying water service, it is not usually the private consumer who is responsible for the chief demands on the water system. The greatest demand for water is imposed by the municipal requirements for fire protection. Indeed, the demand for water for fire protection in many instances determines the time when water supply shall be undertaken on a community basis, either by the municipality itself or by a company; and it is the same fire-protection demand which dictates the size of the mains and the capacity of the pumping equipment.

The proportion of the capacity costs which are attributable to fire-protection service depends upon the size of the community and the size of the company: the proportion of cost is higher for the small company and falls sharply as the size of the community increases.²⁵ Of course, a part of the capital investment is not influenced by the requirements of fire protection, for water for fire-protection purposes need not be filtered and purified; however, these treatments must be provided for domestic consumption. Their charters require many water companies to supply free service to the municipality, including fire-protection service; in these circumstances, the members of the community as water consumers, rather than as taxpayers, bear the costs of fire protection.

FLAT RATES. The flat rate with which most utilities began their service has survived longer among water utilities than for other companies. A typical example of the classified flat rate for domestic service is that of the Seymour Water Company:

ANNUAL FLAT RATES
Unmetered service

	Per year
Dwelling houses—each family:	
For sink	\$8.00
Sink and set tub	9.00
Sink and toilet	11.00
Sink, toilet, and bowl	12.00

²⁵ " . . . It is estimated that the required additional investment for rendering fire protection service ranges from 30 per cent in large plants to 70 per cent in small plants of the total investment. . . ." (*Monroe v. The Monroe Water Co.*, P.U.R. 1920E, 444, 446-447 [Wash., 1920].)

"In several cases detailed studies have been made by us to determine the proper percentage of total revenue which should be allocated to fire service. This has been found to vary from about 12½ per cent for the larger companies to as high as 25 per cent or even 30 per cent for the smaller companies. In this case, it is our opinion that about 12½ per cent is the proper proportion of total revenue to be collected from fire service in each division. . . ." (*Re New Jersey Water Co.*, P.U.R. 1929B, 279, 285 [N.J., 1929].)

Sink, toilet and bath	15.00
Sink, toilet, bath and bowl	17.00
Sink, toilet, bath, bowl and set tub	19.00
Each additional sink, bowl, or set tub	1.00
Each additional toilet or bath	2.00
Each additional faucet in stable or garage	3.00
Hose—For hand use only	6.00
For revolving sprinklers, sprays, or hose other than by hand	12.00 ²⁶

The real objection to the use of flat rates is that waste is encouraged. Leaky fixtures and pipes are neglected; more water is used than is actually needed; excessive quantities may be used for sprinkling the lawn; et cetera. Waste cannot be controlled through raising the price of the service, since a higher price on a flat rate only leads to a curtailment of the number of outlets and approximately the same quantity of water may be wasted as before.

METER RATES. Meter rates may be billed on a gallon or on a cubic-foot basis. The rate form may be either a straight-line meter rate or a block rate. The following is an example of a simple block rate:

First thousand cubic feet—	35¢ per hundred cubic feet.
Next 2,000 cubic feet—	24¢ per hundred cubic feet.
Next 7,000 cubic feet—	18¢ per hundred cubic feet.
Next 5,000 cubic feet—	12¢ per hundred cubic feet.
All over 15,000 cubic feet—	11¢ per hundred cubic feet. ²⁷

The objective in introducing meter rates may be to increase the revenue of the company. The net revenue is usually further increased because the introduction of meter rates reduces waste, and may even enable the company to postpone capital additions which had previously appeared to be imminent. The use of the meter rate also affords a more just allocation of cost among different consumers.

TWO-PART RATES. Many water companies have adopted a two-part rate composed of a service charge and a commodity charge. The service charge is normally a demand charge proportional to the capacity costs imposed by the consumer. Commonly the service charge is calculated according to the size of the meter, and may function as the minimum bill to protect the company from non-use of the service. The commodity charge is usually in a block form. The following is a two-part rate:

²⁶ *Selectmen v. Seymour Water Co.*, P.U.R. 1932B, 175, 185 (Conn., 1932).

²⁷ *Re Milford Water Co.*, P.U.R. 1919F, 672-676 (Mass., 1919).

					Service charge per year
$\frac{5}{8}$ -inch meter and (or) service					\$ 9.00
$\frac{3}{4}$ " " " " "					15.00
1 " " " " "					20.00
$1\frac{1}{2}$ " " " " "					30.00
2 " " " " "					40.00
$2\frac{1}{2}$ " " " " "					50.00
3 " " " " "					60.00
4 " " " " "					80.00
6 " " " " "					100.00

In addition to above service charges, water consumption shall be charged for at the following rates:

For the first 1,000 cubic feet of water per month, or part thereof, 25¢ per 100 cu. ft.

For water in excess of 1,000 cubic feet and under 10,000 cubic feet per month, 15¢ per 100 cu. ft.

For water in excess of 10,000 cubic feet per month, 10¢ per 100 cu. ft.

Hydrants, each, per year, \$75.00.²⁸

INITIAL-CHARGE RATES. Consumer opposition to the two-part rate with a service charge has led some companies to adopt an initial-charge rate form. This form involves an initial charge for which a limited amount of water is supplied, the intent of the initial charge being to impose the proper demand costs on each individual consumer, irrespective of the quantity of his consumption. The remainder of the schedule will normally be in the form of a block commodity rate. The following is illustrative of the initial-charge schedule:

\$1.25 for 400 cubic feet or less.

30¢ per 100 cubic feet used between 400 and 1,000 cubic feet.

20¢ per 100 cubic feet used between 1,000 and 10,000 cubic feet.

15¢ per 100 cubic feet used per month in excess of 10,000 cubic feet.²⁹

The initial charge form is less satisfactory than the service charge as a means of allocating demand costs among consumers. The service charge based on differences in the size of the meter affords at least an approximation to the demand costs.

FIRE-PROTECTION SERVICE. In some instances no direct charge is made for fire-protection service, the utility being required to supply free service to the municipality as a condition of its charter. It is fairer to consumers and more satisfactory to the company if the municipality assumes the responsibility for paying the costs of fire protection. The charge for fire-protection service is normally based upon the number of hydrants and is proportional to the capacity of the main from which the hydrant is served.

²⁸ *Commission v. Sanford Water District*, P.U.R. 1932D, 395, 398, (Me., 1932).

²⁹ *Hollister v. Hollister Water Co.*, P.U.R. 1915D, 626, 627 (Cal., 1915).

The charge per hydrant is not a wholly satisfactory basis of collecting for fire protection. The cost is not proportional to the number of hydrants, and if the rate per hydrant is high the quality of fire protection may suffer because of the hesitancy of the city to install additional hydrants. Actually, the cost of fire protection may be smaller if many hydrants are installed, since the nearness of one or more hydrants to the fire may aid in bringing a fire under early control. Theoretically, the charge for fire protection should reflect simply the cost of installing the hydrants, if the hydrants are purchased and installed by the water utility instead of the municipality, plus a demand charge which reflects the probable capacity which the fire-protection service will require. Thus, an increase in the area of the community or an increase in the number of dwellings will presumably have little effect upon the capacity which the water company needs to supply, except in mains; but an increase in the congestion of the municipality or in height of buildings increases the fire risk, and compels the utility to provide more powerful pumping equipment and larger reserve capacity.

7. TELEPHONE RATES

Telephone service is rendered to many classes of subscribers under quite different conditions with respect to the costs and the value of service. The costs of telephone service vary also from community to community, the costs and rates being lower in the small towns than in the large city. The higher rates in the larger cities reflect both the higher costs of service in large communities and the higher value to the subscriber who can reach many telephone stations and maintain social and business contacts on an extensive scale. The higher costs of telephone service in the larger cities result from many factors: the higher cost of providing underground circuits, the larger number of exchanges that are needed, the extensive equipment required for switching calls from one exchange to another, and the higher operating costs of a more extensive and more complicated service.

EXCHANGE RATES. *Flat rates.* The flat rate is the basis of the charge for local exchange service, that is, service within the territory served by the single central office. These flat rates differ according to the class of service, the class within which any consumer falls being determined in part by the telephone company's rules and in part by the consumer's choice. If the subscriber is a business organization, a business rate must be paid. If the subscriber wishes a telephone for his residence he may choose between several classes of service—a private line, a two-party line, or a four-party line. The flat rate on a monthly basis varies according to the category of the service and the size of the community in which the subscriber is located. For example, the Southern New England Telephone Company's rates for New Haven in 1940 for residential subscribers were \$4.00 for the private line, \$3.50 for the two-party line and \$3.00 for the four-party line. The business subscriber having unlimited service paid \$8.50 per month. Table 36 presents a summary of the exchange service rates of the Southern New England Telephone Company.

Measured service. Instead of unlimited service, the subscriber may choose

Message Rate, Individual Only

and First 75 Calls	4.50	4.00	4.00	4.00	3.75	3.50	....	....	....
Next 75—Each	.04	.04	.04	.04	.04	.04	....	....	....
All Others—Each	.03	.03	.03	.03	.03	.03	....	....	....
Semi-Public									
Daily Guaranty †	.25	.24	.22	.20	.18	.18	.15	.13	.12
Booth—Additional Daily									
Guaranty	.05	.05	.05	.05	.05	.05	.05	.05	.05

Outside the base rate area in all exchanges, some form of party line service (either four or six or multi-party) is available for both residence and business service.

Individual lines outside the base rate area are provided at base rates plus mileage charges, or at special zone rates.

If there is any question as to what service is regularly furnished outside the base rate area, or in which area the prospect is located, communicate with the Business Office.

* In certain exchanges four-party service is not furnished, party line service being furnished instead at this same rate.

† In dial service areas, four-party service is furnished instead of party line service.

‡ In seasonal localities where service is furnished for temporary periods extending over or into the summer season, the guaranty is increased by 5¢ a day.

to take his telephone service on a measured basis. The rate form used by the telephone company for this class of service conforms to the block rate with an initial charge. In 1940, business subscribers at New Haven, Connecticut, might have service on the following basis: \$4.50 per month for the first 75 outgoing calls; four cents for each additional call for the next 75 calls; and three cents per call for all calls in excess of 150 per month. The widespread adoption of measured service would significantly increase the investment in equipment for each subscriber.

TOLL RATES. Toll service is communication between two exchanges. The toll schedules are constructed on the "distance principle": the greater the distance, the higher the charge, although the charge does not increase in direct proportion with the increase in distance. The subscriber may select the class of toll service which he will have. The basic rates are established on a station-to-station basis—that is, calls where the person placing the call simply designates the number of the telephone which he wishes to reach. A more expensive class of service is the person-to-person call, where the individual initiating the call designates a named individual with whom he wishes to speak. The elasticity of demand for toll service is recognized by the telephone companies in quoting lower rates on toll calls which are placed off-peak. The off-peak hours are defined as the hours from 7:00 P.M. to 4:30 A.M. on weekdays and all day on Sundays.

SERVICE CHARGES. The telephone companies seek, as far as possible, to charge the individual subscriber according to the costs which he imposes upon the company. Thus, there are service charges for installation of service, for moving the instrument from one location to another, for changing the type of equipment, et cetera. No charge is made for repairs and replacements necessitated by a failure of equipment. Where the individual lives beyond the normal exchange area, he may be required to pay an additional charge representing the cost to the company of carrying the line to his property and maintaining service there.

EQUIPMENT CHARGES. Many subscribers require more than the normal equipment for their telephone service. The following schedule is suggestive of some of the charges made for supplemental equipment:

SUPPLEMENTAL EQUIPMENT—ALL EXCHANGES

Service

Applicable to miscellaneous supplemental equipment furnished throughout the territory served.

<i>Rate</i>	<i>Installation charge</i>	<i>Rate per month</i>
Ordinary extension bell	\$1.25	\$0.25
Ordinary extension bell with key	1.50	.35
Loud ringing extension bell	1.25	.40
Loud ringing extension bell with key	1.50	.50
Buzzer circuit, including 1 push button, 1 buzzer, battery and 50 ft. of wiring	1.50	.25
Each additional push button	.35	.05

Each additional buzzer	.35	.10
Each additional 50 ft. or less of wire	.50	.10
Each key installed in addition to station	1.25	0.25
Desk set cords, over 6 ft. but not exceeding 15 ft. in length	1.00	.10
Booth	5.00	1.50
Substation vacuum tube amplifier for deaf persons	10.00	3.50
Chest transmitter and head receiver for use by relief operators on private branch exchange switchboards equipped with such sets:		
With single head receiver		1.25
With double head receiver		1.25
Head receiver in addition to, or in place of, the hand receiver on a primary or extension station:		
Single head receiver or watch case receiver		.25
Double head receiver or two watch case receivers		.50
Each operator's chair for use with nonmultiple switchboards where such switchboards are not mounted on a platform		.25
Double head receiver substituted for a single head receiver		.25
Each terminal in central office connection with night listing for private branch exchange systems		1.25
Jack and plug installation for use with portable telephones:		
Each jack	3.00	.10 ³⁰

DIRECTORY LISTINGS. The importance of the telephone for business purposes has made the telephone directory of great importance in bringing business to the individual subscriber. The telephone companies have capitalized on the directory by providing additional listings and additional information with respect to the subscriber's listing on payment of additional fees. The directories have also become popular as advertising media.

8. LOCAL TRANSIT RATES

Local transportation service is conventionally rendered for a uniform fare whatever the length of the ride. This convention is based upon custom dating back to the introduction of the streetcar. Like all flat fares, the transit fare is neither an adjustment to the costs of rendering the individual transportation service nor a promotional rate to encourage increased riding. The persistence of the flat fare is historical, a reflection of franchise provisions. At the present time it is probably due to the inconvenience of introducing a rate proportional to distance, when such rates would increase costs or slow the service by reason of the necessity of calculating the fare and making change. Public sentiment has also been an obstruction to the use of a transportation fare other

³⁰ *Re Southern California Telephone Co.*, 33 Cal. R.C. 812, 849-850 (1929).

than the conventional flat rate. Streetcar companies suffering a loss of patronage have been hesitant to adopt a rate form which might be a source of annoyance to the riding public and a possible cause of declining revenue for the street railway.

Zone systems are used by bus and trolley lines in interurban service, the charge being proportional to the distance. The zone system was introduced during the period of price inflation accompanying World War I and did prove successful then in increasing the revenues of the streetcar companies. The subsequent abandonment of these rates was part of an attempt to retain patronage in the face of competition by jitney operators and the private motorcar. The usual zone-fare system set a basic rate of five or seven cents for the first one or more zones, with a charge of one or two cents for each additional zone.

The practice of the streetcar companies has differed with respect to the transfer. Originally, the transfer was given free, permitting the passenger to shift from one line to another in reaching his destination. When the streetcar companies faced critical financial problems, the practice was introduced of charging one or two cents for the transfer. The wisdom of such charges must depend upon local riding habits. Under certain circumstances it is conceivable that a transfer charge might divert traffic so that less rather than more net revenue would result. Conventionally, the transfer is restricted with respect to the direction of travel and the time within which it must be used. Experiments have been made, however, with the transfer as a device for increasing travel, permitting the use of the transfer for round trips on a single fare; such a plan was adopted by the Milwaukee Electric Railway and Light Company, the only restriction being that transfers should be used within one hour.³¹

Since World War I the street railways have experimented widely with devices to increase travel. A highly successful device has been the weekly pass. The weekly pass may be given as a means of encouraging the use of the streetcar in preference to competing forms of transportation; and where this purpose is in view it is necessary to permit the holder of the pass to ride even during peak hours. The weekly pass has also been used, along with the monthly pass, to encourage off-peak riding. Off-peak passes would be usable only between the hours of, say, 9:00 A.M. and 4:00 P.M. and after 7:00 P.M. on weekdays, on Saturday after 9:00 A.M., and all day Sunday. The Milwaukee Electric Railway and Light Company has experimented extensively with this plan. It offered the regular weekly pass at a dollar a week at a time when the cash fare was ten cents and the ticket rate eight and a third cents (six tickets for fifty cents). This plan was put into effect in 1930, and in 1931, in a period of depression; the Milwaukee Company suffered a decline in revenue-passenger rides of only 5 per cent in comparison with declines ranging from 10 to 20 per cent in other comparable industrial cities. Also, an off-peak shopper's pass was offered at seventy-five cents per week, usable between 9:00 A.M. and 4:00 P.M. and after 7:00 P.M., on Saturdays after 9:00 A.M., and all day Sunday. To stimulate further the sale of passes, two school children under

³¹ P.U.R. 1931E, 289, 295 (Wis., 1931).

twelve years of age were allowed to ride free on the regular dollar weekly pass on Sundays.³²

Bus lines have followed the rate forms of street railways, usually charging the same rates as prevail for the older service. Rapid transit lines have presented a special problem, both because their costs have been so high, and because political and franchise considerations have prevented readjustments of their fares according to service cost. At the present time the flat rate is customary.

Another form of local transportation service is that provided by the taxi. The usual taxi rate, where it is not a flat rate within the town or city, is a mileage rate, with the first quarter mile being charged at a higher level. A rate of fifteen cents for the first quarter mile and five cents for each additional quarter mile might be called the conventional taxi rate.

³² *Re Milwaukee Electric Ry. & L. Co.*, P.U.R. 1931E, 289 (Wis., 1931).

CHAPTER XI

THE PRESENT-FAIR-VALUE CONCEPT OF THE COURTS

I. INTRODUCTORY

The peculiar position of the courts in the American regulatory scheme requires that the judicial concept of present fair value be introduced before a detailed consideration of the methods of valuation and rate making employed by the regulatory commissions. In the early instances of statutory rate regulation by the states, the challenge by regulated interests that they were deprived of their property contrary to the Fourteenth Amendment received scanty consideration at the hands of the Supreme Court.¹ Indeed, in the majority decision in the case of *Munn v. Illinois*, the Court refused to pass on the question of whether the established rates were sufficient to afford a fair return upon the investment in the regulated business, holding that, if the power to regulate existed, the legislature was the sole judge of the reasonableness of the rates and charges established.² The steps in the abandonment of this position and the assertion of the right of judicial review have been traced.³ Once the right of judicial review of the reasonableness of rates established under legislative authority had become accepted in American jurisprudence, the necessity for judging the constitutional propriety of regulated rates created the occasion for a series of decisions by the Supreme Court which exerted profound influence upon the developing mores of rate regulation by administrative authorities.

TESTS OF CONSTITUTIONALITY IN EARLY DECISIONS. In the early nineties, the Supreme Court had been puzzled by cases calling for a decision as to whether rates established by state authority overstepped the bounds of constitutional propriety. In 1894, in the case of *Reagan v. Farmers' Loan & Trust Company*, the Supreme Court for the first time enjoined rates established by commission authority on the ground that the rates were too low to permit adequate earnings to the railroad.⁴ The nature of the evidence which the Court was considering and the character of the problems which confronted it did not require any resort to valuation techniques.⁵

The matter of the tests of the reasonableness of rates fixed by legislative authority arose first in the lower courts. In November, 1894, the Federal Circuit Court, speaking through Circuit Justice Brewer in the case of *Ames*

¹ Chapter VI.

² Chapter VI.

³ 94 U.S. 113, 133-134 (1877).

⁴ 154 U.S. 362-413 (1894).

⁵ The Court was careful to observe that the mere failure to produce some profit could not conclusively establish that the rates were unjust and unreasonable; that extravagance in construction, waste in management, enormous salaries, unjust discriminations, inadequate traffic, and a general decline in the costs of construction since the time of the road's completion, might result in a failure to earn profits under rates which would otherwise be reasonable; and yet it concluded that "justice demands that every one should receive some compensation for the use of his money or property, if it be possible without prejudice to the rights of others."

v. *Union Pacific Railway Company*, refused to lay down any hard-and-fast rule for guidance in such matters. However, its discussion introduced the so-called "condemnation analogy" to disclose the equities of rate regulation to the different parties in interest.⁶ But two years later, another Circuit Court, when presented with a similar problem with respect to the establishment of water rates, emphasized present value to the exclusion of cost as the basis upon which rates should be set.⁷ In its formulation of the problem, there was no attempt to define precisely what significance was attached to "present value," though the implication is clear that present value was thought of as synonymous with the present market value of the property. And no question was raised as to whether such market values were capable of definite determination or whether there existed any theoretical justification for the adoption of this measure of the reasonableness of rates established by public authority.

In the early cases the investors' interests rather than the consumers' tended to be emphasized by the courts. In 1896, however, the Supreme Court, in a case involving the establishment of tolls for the use of a turnpike road, underscored the priority of the public interest over private interests in such matters, but in doing so, found itself no nearer the development of a general rule for guidance in such matters.⁸

2. THE SMYTH v. AMES CASE

THE BACKGROUND. It is to the *Smyth v. Ames*⁹ opinion in 1898 that one must turn for the first case in which the Court discussed the complexities

⁶ "What is the test by which the reasonableness of rates is determined? . . . Now, if the public was seeking to take title to the railroad by condemnation, the present value of the property, and not the cost, is that which it would have to pay. In like manner, it may be argued that, when the legislature assumes the right to reduce, the rates so reduced cannot be adjudged unreasonable if, under them, there is earned by the railroad company a fair interest on the actual value of the property. It is not easy to always determine the value of the railroad property, and if there is no other testimony in respect thereto than the amount of stock and bonds outstanding, or the construction account, it may be fairly assumed that one or other of these represents it, and computation as to the compensatory quality of rates may be based upon such accounts. In the cases before us, however, there is abundant testimony that the cost of reproducing these roads is less than the amount of the stock and bond account, or the cost of construction, and that the present value of the property is not accurately represented by either the stocks and bonds, or the original construction account. Nevertheless, the amount of money that has gone into the railroad property—the actual investment, as expressed, theoretically, at least, by the amount of stocks and bonds—is not to be ignored, even though such sum is far in excess of the present value. . . ."

" . . . Is there not an element of equity which puts the reduction of rates in a different attitude from the absolute taking of the property by virtue of eminent domain? In the latter case, while only the value is paid, yet that value is actually paid, and the owners may reinvest, and take the chances of gain elsewhere, whereas, if the property is not taken, the owners have no other recourse than to receive the sum which the property they must continue to own will earn under the reduced rates. Considerations such as these compel me to say that I think there is no hard and fast test which can be laid down to determine in all cases whether the rates prescribed by the legislature are just and reasonable, and that often many factors enter into the determination of the problem." (64 Fed. 165, 177-178 [C.C.D. Neb., 1894].)

⁷ *San Diego Land and Town Company v. National City*, 74 Fed. 79, 83-94 (C.C.S.D. Cal., 1896).

⁸ *Covington & L. T. Rd. v. Sandford*, 164 U.S. 578, 596-597 (1896).

⁹ 169 U.S. 466-550 (1898). Mr. Justice Harlan delivered the opinion.

that must arise in any attempt to judge the constitutional validity of rates established by other branches of the government. By virtue of repeated references to its decision and dicta, this case has become a landmark in the law governing the regulation of rates and charges—a pre-eminence which has been strengthened by the fact that the Court has never found it necessary to overrule specifically the procedure there described for the testing of the confiscatory character of rates established by legislative or administrative authority.

In 1893, Nebraska enacted a statute which classified freights, fixed maximum rates for the transportation of freight upon the railroads of the state, and established a Board of Transportation to carry out other regulations of the railroads.¹⁰ The stockholders of the Union Pacific Railway Company and other railroads operating in Nebraska thereupon brought suit against the railroads and the state officials, seeking to enjoin the railroads from complying with, and the state officials from enforcing, the provisions of this statute. The lower federal court granted the injunction, holding that the effect of the statute was to confiscate the property of the carriers.

Before the Supreme Court of the United States, to which the state carried an appeal, the arguments of the attorneys clearly reflected the economic interests of their clients. The railroads were naturally opposed to all regulation, urging that it was quite unnecessary since they were prevented from imposing exorbitant charges by competition and by the necessity to develop a large volume of traffic in a relatively new and unsettled territory. But if regulation should be permitted, the railroads urged that they be permitted such charges as would enable them to pay operating expenses, interest on outstanding obligations, and a dividend upon the common stock. This argument the Court rejected as ignoring the rights of the public and the duties which the railroads owed to shippers.¹¹ Furthermore, the railroads had been constructed largely by so-called "construction companies" with an accompanying inflation of cost in terms of the securities with which the railroads paid the construction companies, and there had been no supervision of either the security issues or the accounting practices of the railroads.¹² The railroads also sought to argue that the charges should, as a minimum, be calculated upon the investment or cost of their property.

In the presentation of the case for the state, the counsel, William Jennings Bryan, argued for the unrestricted right of the state to regulate the rates charged by common carriers,¹³ or, should this contention not prevail, that the courts would intervene only if the established rates were so low as to yield no income above operating expenses. To this the Court replied that the rights of the investors could not be disregarded.¹⁴ If the reasonableness of the rates established by legislative authority should be subject to judicial

¹⁰ The Board was empowered to change the classification of freights and lower rates, but it could make no change which would result in an increase in freight charges.

¹¹ 169 U.S. 466, 545-546.

¹² *Ibid.*, 544-545.

¹³ This argument was, of course, based upon the authority of the Court's decision in *Munn v. Illinois*, 94 U.S. 113 (1876).

¹⁴ 169 U.S. 466, 546.

review, the state was unwilling that the basis of judgment should be either the ability of the railroads to pay interest and dividends upon the outstanding securities or a return upon the actual cost of the properties. Instead, the state contended that the reasonableness of the rates should be tested by the return upon what it would then cost to replace the railroads' properties. In addition to the suspicion with which both capitalization and investment were regarded, there was another cogent reason for the state's preference for the present replacement cost, namely, that the railroad had been constructed in the years immediately following the Civil War, and the long postwar decline in the price level, combined with improvements in construction techniques, had brought the replacement cost of the railroad properties well below their original cost.

THE "RULE." Faced with these conflicting arguments, the majority of the Supreme Court refused to accept any one of the contentions of the contesting parties. Instead, following the custom so prevalent with jurists called upon to consider conflicting facts and opposing arguments, the Court preceded its statement of its conclusion by summarizing the opposing arguments and stating that these, and all other relevant facts, should be considered. Thus evolved the oft-cited "rule" of *Smyth v. Ames*:

"We hold, however, that the basis of all calculations as to the reasonableness of rates to be charged by a corporation maintaining a highway under legislative sanction must be the fair value of the property being used by it for the convenience of the public. And in order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property. What the company is entitled to ask is a fair return upon the value of that which it employs for the public convenience. On the other hand, what the public is entitled to demand is that no more be exacted from it for the use of a public highway than the services rendered by it are reasonably worth."¹⁵

This statement of the Supreme Court has been variously interpreted by courts, commissions, and legislatures. By many, it has been treated as establishing a definite rule for the regulation of utility charges, a rule binding upon all agencies of control. Even attempts to enact legislation looking toward a more effective procedure for commission regulation have been opposed in the name of this decision and of those that followed in its train.¹⁶ It is, therefore, essential that this "rule" be analyzed to reveal fully its meaning and that its significance as a precedent be examined.

¹⁵ *Ibid.*, 546-547.

¹⁶ Thus the majority of the New York Commission on the Revision of the Public Service Commissions Law, in 1930, rejected a proposal to recommend the adoption of the prudent-investment rate program on the ground that such a plan would fail to conform to the decisions of the Supreme Court. (New York, Legislative Document [1930] No. 75, p. 20.)

ANALYSIS OF THE "RULE." The Court's statement of the fundamental rights of the public and the investors was briefly set forth: "What the Company is entitled to ask is a fair return upon the value of that which it employs for the public convenience. On the other hand, what the public is entitled to demand is that no more be exacted from it for the use of a public highway than the services rendered by it are reasonably worth." From this it may be concluded that the constitutionally acceptable rate lies somewhere between the upper limit of the value of the service to the consumer and the lower limit of a "fair return upon the value" of the property which the company uses in the public service. The difficulties of giving concrete magnitude to "value of service" have already been explored.¹⁷

The measurement of the company's rights, to a "fair return upon the fair value of the property," requires a twofold proceeding: a finding of the "fair return" and a calculation of the "fair value of the property." Presumably, the finding of the "fair return" involves a decision as to the percentage rate of return which should be earned upon the property employed, but the opinion is silent as to the procedure which will yield the acceptable measure of this rate of return. The directions as to the calculation of "value" are more detailed even though they lack explicitness. The "elements of value," as they have come to be called in subsequent decisions of this, and other, courts, include five items:

(1) The "original cost of construction" plus "the amount expended in permanent improvements." This sum is commonly designated "the original cost to date" and remains one of the accepted measures of rate-making value.¹⁸

(2) The "amount and market value of its bonds and stock" involves two magnitudes. The "amount" of a corporation's bonds and stock is normally interpreted to mean the aggregate of the par values of the outstanding securities, or in the case of those corporations whose securities have no par value, the sum of the stated values of those securities. Many of the objections to this measure of the corporation's right to income were very apparent in this case: the railroads had issued securities in excess of the cost of the properties; these securities had been subject to no regulation by public authority; and finally, there was abundant evidence that the aggregate par values were in excess of both the current value of the railroad properties and the estimated cost of constructing those properties at the time. Discrepancies between the par value of the outstanding securities and the amount of the investment in the property of a corporation may arise in a number of ways: the securities may have been issued at less than par; property or services may have been purchased in exchange for securities having a par value in excess of the reasonable cost of the property acquired; or securities may have been issued as bonus stock to promoters or to purchasers of other securities. And of course, with mature properties there is also the likelihood that the par value of the outstanding securities may be less than either the investment in the property

¹⁷ Chapter IX.

¹⁸ The importance of this "measure of value" necessitates a full consideration of its determination and the problems that arise in its use. See Chapter XII.

of the company or the present replacement cost of that property as a result of a long-continued policy of reinvesting earnings. For these reasons the nominal capitalization affords no measure of the sacrifice made by either the original investors (and of course has no relation to the cost to investors who purchased their securities subsequently in the open market) or of the sums invested by the corporation.

Subsequent decisions of the courts and commissions have been almost universal in their rejection of the par value of securities as a measure of a utility's right to income.¹⁹ In its rejection of security capitalization as a rate base, the Court has not distinguished between those situations where the security issues were largely fictitious (that is, where the securities were issued without the receipt of equivalent consideration by the issuing corporation) and those where changes in prices left the outstanding capitalization excessive with respect to contemporary costs of construction. Undoubtedly one of the most potent reasons for the rejection of capitalization as a measure of the company's right to income has been the fact that these securities had been issued without any supervision by public authority.²⁰ It is significant that in Massachusetts, where the issuance of utility securities has been regulated from the virtual inauguration of the industry, the commissions of that state have based their regulation of rates largely on a consideration of the revenue required to meet the interest and dividend payments on outstanding securities.

In the absence of complete commission control over securities, only two arguments have been advanced for the acceptance of capitalization as a measure of the right of the regulated enterprise to earnings: (i) that this rate base, by supporting the existing financial structure of the company, will protect both investors and consumers from the disturbances of corporate bankruptcies and reorganizations; and (ii) that the interests of innocent investors who have presumably paid full value for the outstanding securities, would be sacrificed by a disregard of capitalization. To the first plea it may be said that, though the short-term interests of consumers may lie in the avoidance of unnecessary interruptions to service, their long-run interests in the fullest development and widest availability of the service demands that rates be equated to the costs of satisfactory and adequate service even though this compel a reorganization of overcapitalized corporations. To the innocent investors' plea may be opposed the interests of the equally innocent consumers, whose superior rights regulatory agencies have usually recognized.²¹

The "market value" of the corporation's bonds and stocks can, in practical application, mean only the sum secured by the multiplication of the number of securities of each issue outstanding by the respective market quotations

¹⁹ *Knoxville v. Knoxville Water Company*, 212 U.S. 1, 11 (1909).

²⁰ Under the logic of the *Willcox v. Consolidated Gas Company* decision, it might be made to appear that where securities had been issued with the sanction of some public body, particularly a public body entrusted with the regulation of rates, that such capitalization would be recognized as evidence of the value of the property for rate-making purposes. The Court accepted as a part of the valuation of the company's property an item of \$7,781,000 for franchises on the ground that the capitalization of the consolidated company had been approved by the New York legislature at the time of the merger, and that this capitalization was based in part on this valuation of franchises. (212 U.S. 19, 47 [1909].)

²¹ *Fuhrmann v. Buffalo General Electric Company*, 3 P.S.C. 2d D., 739, 768-769 (1913).

for each issue. It seems that this "measure of value," suited to the determination of commercial valuations based upon earning capacity but unsuited to situations where the earnings are themselves the subject of regulation, is the illogical by-product of the illogical "condemnation analogy" which Mr. Justice Brewer made basic to his decision in *Ames v. Union Pacific Railway Company* and which was adopted by Mr. Justice Harlan in his opinion in *Smyth v. Ames*.

The impropriety of market value of outstanding securities as a measure of the rate base has been widely, almost universally recognized, and both theoretical and practical considerations have led to its rejection. Of the theoretical objections the most serious is the circular reasoning which this measure involves. Investors' appraisals of securities, and their purchases and sales, are based largely upon their estimates of the earnings which such investments will yield; the yields of the securities depend upon the earnings of the underlying physical property which arise directly from the rates being charged by the utility. Thus if values depend upon earnings, and earnings upon rates, to make rates depend upon value would complete the circle.²² In practical effect, then, existing rates would be justified, however excessive or inadequate they might be in relation to other measures of an adequate return. Furthermore, the market value of securities is quite unrelated to the sums that have been invested by the corporation and equally unrelated to the sacrifices made by present investors in acquiring their stock holdings.²³ And, finally, the market quotations on the securities of a corporation reflect the totality of the corporation's earnings, and to the extent that any utility is deriving income from property other than that employed in the public service, the "value" would be overstated by the use of this measure.

On the practical side, equally serious objections may be marshaled to oppose the use of market value of outstanding securities to measure the utility's right to income. The first difficulty arises from the fact that market values are very uncertain and inconstant; fluctuations in securities prices are frequent, and very often quite unrelated to the financial position of the regulated enterprise. The market values of the securities are subject to a wide variety of influences: the past earnings of the company; the present and future earnings as affected by the regulations of legislatures, commissions, and courts; the nature and extent of competition; the general prosperity and prospects of the community served; the state of the investment market, the

²² This point has recently been made with great cogency: "To hold that a regulation is valid if it permits the company to earn a fair return on the value will protect the owner against an uncompensated destruction of value *only* if fair return be so defined that it will at least equal the rate needed to attract capital, and if value be so defined that it will at least equal a capitalization of the earnings anticipated under the old rates. And under these definitions we know in advance that every regulation of rates which reduces net earnings will yield less than a fair return on the value. If we know the result in advance, it is a waste of time to embark on elaborate calculations of value. It is like taking careful measurements of the circumference and the diameter of a circular race-track to see whether the former is more or less than 3.1416 times the latter." (Hale, "Conflicting Judicial Criteria of Utility Rates," 38 *Col. L. Rev.* 959, 964 [June, 1938].)

²³ The most that can be said is that the present market prices of the securities represent a so-called "opportunity cost" to the present investors of retaining their investment in the corporation in question.

supply of funds seeking investment and the competing opportunities for investment; the attitude of the public toward the utility investments; the good or ill repute in which utility managements are held—these are only a few of the influences that play upon the investment markets where utility securities are bought and sold. Moreover, the market prices of securities are subject to manipulations of various sorts—the operations of stock pools, the misrepresentations of corporate accounting, and the exhilarating or depressing effects of market rumors. Except in the case of the larger utilities, the securities of these companies are not listed on the stock exchanges, and no satisfactory quotations would be available to establish this value.

(3) The “present as compared with the original cost of construction” is now generally designated the “cost of reproduction” of the utility property. This measure of value was introduced, as has been noted, by reason of the state’s unwillingness to accept the railroads’ claim to earn on inflated costs. In a period when prices were declining and improvements in technology were further reducing the costs of railroad equipment, this measure possessed a peculiar attractiveness for the shipping public. Furthermore, the distrust of past financial practices in the issuance of securities and the lack of accurate accounting records combined to turn attention toward a measure of the regulated enterprises’ right to earnings which should be free from the infirmities of these other yardsticks. As the most widely discussed and commonly used measure of the rate base, the meaning and determination of reproduction cost, as well as its shortcomings, will be fully presented in subsequent chapters.²⁴

(4) The fourth so-called “measure of value,” “the probable earning capacity of the property under particular rates prescribed by statute,” has languished in neglect. Even its precise meaning has not been thought worthy of critical examination by most of the commentators on the *Smyth v. Ames* “rule.” Two possible significances suggest themselves. In the first place, the “probable earning capacity of the property under particular rates prescribed by statute” may be taken at its face value as another “measure” of value. As such, the probable, or potential, earning capacity implies the capitalization of the prospective earnings at some rate of return, presumably the “fair rate of return.” Like the “market value” measure discussed above, this would involve circular reasoning; for the value so found will be such as will make the prospective earnings under the prescribed rates appear “reasonable.”²⁵

A more common interpretation of this item makes it the correlative of the fifth item, “the sum required to meet operating expenses.” Thus interpreted, the function of the “probable earning capacity of the property under particular rates prescribed by statute” is to determine the gross operating revenue which must suffice to cover “the sum required to meet operating

²⁴ Chapter XIII. See also Chapter XVI.

²⁵ On the other hand, it might perhaps be possible to compare the capitalization of the prospective earnings at the fair rate of return with the other “measures” of value; and if the capitalization of prospective earnings should yield a figure substantially less than the other measures of value, it might be concluded that the rates in question were confiscatory; but if the capitalization of prospective earnings should yield a figure in excess of the other measures of value, the rates might be held nonconfiscatory.

expenses" and a "fair return upon the fair value of the property." This second interpretation makes it still a part of the *Smyth v. Ames* "rule," though in no sense "a measure of value"; the first allows it to fall into disuse, mentioned only by those courts and commissions which wish to affirm their allegiance to the venerable rule by citing it in full.

(5) "The sum required to meet operating expenses," though listed as one of the items that must be found in order "to ascertain that value" is obviously unrelated to any measure of value.

A TENTATIVE APPRAISAL. An appraisal of the *Smyth v. Ames* rule in its entirety reveals a disposition on the part of the Court to permit the presentation and consideration of all evidence that could conceivably be pertinent to the determination of the rights of the investors and shippers in railroad properties. This impression is heightened by Mr. Justice Harlan's casual injection into the "rule"—"We do not say that there may not be other matters to be regarded in estimating the value of the property." A little thought reveals many other items that would normally come into any careful estimate of the "value" of the property of a going concern: present and prospective competition; the nature and future prospects of the community served; the mildness or severity of the regulatory control; the amount and character of the taxation to which the business is subject; the condition of the physical equipment of the company and the rapidity with which such equipment becomes obsolete with changing technology; the efficiency of management; and the general trend of the costs of the goods and services required in its operations. Perhaps the most startling aspect of this "leading" decision is the failure of the Court to make explicit its inability to accept market value or exchange value as the base for rate making. In subsequent decisions it becomes clear that the majority of the Court is aware of the distinctions which must be made between "fair value" as the basis for the regulation of rates and charges and "present," or "exchange," or "market" value, as those expressions are current in the business world.

3. THE DEVELOPMENTS IN PRESENT FAIR VALUE PRIOR TO 1916

THE EMPHASIS ON PRESENT VALUE. In the decisions that immediately followed *Smyth v. Ames*, the Court was concerned with emphasizing the "present" in "present fair value," and with the rejection of claims of utilities to earn upon their investment or cost. In the *San Diego Land and Town* case, in 1899, the Court was emphatic in its rejection of the cost basis for testing the constitutionality of rates; but its opinion was not explicit or precise as the meaning of "real value."²⁶ And in a second *San Diego Land and Town* case, Mr. Justice Holmes was even more forthright in disposing of a claim to earn upon the cost of property:

"The main object of attack is the valuation of the plant. It no longer is open to dispute that under the Constitution 'what the company is entitled to demand, in order that it may have just compensation, is a fair return upon

²⁶ *San Diego Land and Town Co. v. National City*, 174 U.S. 739, 757-758 (1899).

the reasonable value of the property at the time it is being used for the public.' . . . That is decided, and is decided as against the contention that you are to take the actual cost of the plant, annual depreciation, etc., and to allow a fair profit on that footing over the above expenses."²⁷

THE WILLCOX-CONSOLIDATED GAS COMPANY CASE. The first substantial modifications in the rule of *Smyth v. Ames* came early in 1909 when the Supreme Court handed down two decisions involving the confiscatory character of utility rates. The second of these decisions, concerning the Consolidated Gas Company of New York, was in the direct line of the earlier decisions on the valuation of utility properties.²⁸ The decision and dicta of the Supreme Court added to the rule of *Smyth v. Ames* in three particulars: certain questions of franchise valuation were considered; the reasonable rate of return was discussed more fully than previously; and the significance of a general rise in the price level was weighed.

The Court differed with the lower court in the treatment of franchise values. The lower court had sanctioned an increase in the valuation of the franchises from the \$7,781,000 to \$12,000,000, the increase being proportional to the increase in the value of the tangible property from 1884 to 1905. This the Supreme Court overruled. Indeed, its willingness to accept the valuation of \$7,781,000 for franchises was based solely upon the fact that that valuation had been approved by the state at the merger of the companies in 1884, that securities had been issued on that basis, and that these securities had been traded in for years on the assumption that these franchises represented a valuable asset. The Court noted explicitly that its decision should not be interpreted as sanctioning the inclusion of franchise values in the rate bases of utilities.²⁹

The decision really turned upon the question of the adequacy of the rate of return. The lower court had found that the company was entitled to a return of 6 per cent, but that a return of only 5.14 per cent would be forthcoming.³⁰ The Court, finding a somewhat lower valuation, stated that, as the estimated return of approximately 5½ per cent was so close to the presumptive fair rate of 6 per cent accepted by the lower court, the prescribed

²⁷ *San Diego Land and Town Co. v. Jasper*, 189 U.S. 439, 442, 443 (1903).

The question would not stay settled, for in the next year the plea of a water company for a right to earn upon its investment was again rejected (*Stanislaus County v. San Joaquin and King's River Co.*, 192 U.S. 201, 213-214 [1904].)

²⁸ The Consolidated Gas Company was created through the merger of six smaller gas companies serving the New York area under a statute of 1884, which provided that the issuance of capital stock in effecting a merger should not exceed in amount "the fair aggregate value of the property, franchises and rights of the several companies to be consolidated." (*Laws of 1884*, ch. 367.) The merger was effected by an exchange of stock, the companies agreeing to a valuation of \$7,781,000 for their franchises, a valuation which was accepted as not excessive by a New York Senate committee appointed in 1885 to investigate the merger. In 1905 and 1906 the legislature enacted statutes requiring the reduction of the price of gas to 80 cents per thousand cubic feet (75 cents to the city), which were attacked by the company. (*Laws of 1905*, ch. 736, *Laws of 1906*, ch. 125.) The lower federal court held the rates confiscatory and enjoined their enforcement. (157 Fed. 849.)

²⁹ 212 U.S. 19, 46-48 (1909).

³⁰ 157 Fed. 849, 870 (C.C.S.D. N.Y., 1907). It is interesting to note that the New York Commission of Gas and Electricity, whose order of May 1, 1906, had fixed rates identical with those previously fixed by statute had recognized 8 per cent as a reasonable return. (2 Ann. Rep. N.Y. Comm. of Gas & Electricity 88 [1907].)

rates should not be enjoined without a trial. Mr. Justice Peckham's comments on the requisites of a fair rate of return have been so frequently cited with approval by regulatory authorities that they may be thought of as adding concreteness to the *Smyth v. Ames* rule in this respect:

"There is no particular rate of compensation which must in all cases and in all parts of the country be regarded as sufficient for capital invested in business enterprises. Such compensation must depend greatly upon circumstances and locality; among other things, the amount of risk in the business is a most important factor, as well as the locality where the business is conducted and the rate expected and usually realized there upon investments of a somewhat similar nature with regard to the risk attending them. . . . One who invests his money in a business of a somewhat hazardous character is very properly held to have the right to a larger return without legislative interference, than can be obtained from an investment in Government bonds or other perfectly safe security. . . ." ³¹

And finally it may be noted that the Court's reiteration of the dicta with respect to the primacy of present value, referring to the rights of the utility under conditions of rising costs, tended to become a guiding precedent.³²

THE RECOGNITION OF DEPRECIATION. On the same day that the *Consolidated Gas Company* case was decided, January 4, 1909, the Supreme Court through Mr. Justice Moody handed down its opinion in the *Knoxville Water Company* case, an opinion which wrought an even more important elaboration in the rule of *Smyth v. Ames*.³³ In the matter of procedure the Court was explicit in placing the burden of proof upon the company that would challenge the ordinance rates, and affirmed that the unconstitutionality of the rates must clearly appear to the Court. Disappointment was also expressed that the lower court had relied so much upon prophecy and opinion, that the rates prescribed in 1901 had never been given a trial, and that there was no satisfactory evidence of the actual revenue that would be realized or of the operating expenses which the company might legitimately claim.

The prominence of the *Knoxville* decision is due primarily to its discussion of depreciation. The special master had based his fair-value finding upon the current cost of reproducing the property, without any deduction for depreciation. The lower court followed the master in this respect, and was reversed by the Supreme Court. Though its discussion of accrued depreciation was directly concerned with its deduction from the cost of reproduction new, the logic of the Court's argument applies equally well to the deduction of accrued depreciation from original cost or any other measure of value. And it should be noted that the Court's pronouncements on depreciation were a fundamental part of its decision (and not dicta), and that by making a proper

³¹ 212 U.S. 19, 48-49.

³² "And we concur with the court below in holding that the value of the property is to be determined as of the time when the inquiry is made regarding the rates. If the property, which legally enters into the consideration of the question of rates, has increased in value since it was acquired, the company is entitled to the benefit of such increase. This is, at any rate, the general rule. We do not say there may not possibly be an exception to it, where the property may have increased so enormously in value as to render a rate permitting a reasonable return upon such increased value unjust to the public." (*Ibid.*, 52.)

³³ *Knoxville v. Knoxville Water Co.*, 212 U.S. 1-19 (1909).

deduction the rate of return was found not to be clearly confiscatory and the decree of the lower court was reversed.³⁴

The correlative for the deduction of accrued depreciation is a recognition of current depreciation as an appropriate element in operating expenses. Mr. Justice Moody warned that it was not only the right of a company to make provision in the current charges for presently accruing depreciation, but that it was also its duty to its security holders, and in the case of a public utility, to the public. A failure of the company to make such provision for depreciation, whether due to its dissipation of earnings or to a failure to exact sufficient charges for its service, was said to be no warrant for not basing rates upon the present value of the then existing property of the company.³⁵

THE MINNESOTA RATE CASES. The next major development in the judicial doctrine of present fair value occurred in 1913 with the decision in the *Minnesota Rate Cases*.³⁶ After commenting on the function of the courts as distinct from that of the legislatures, noting that "the rate-making power is a legislative power and necessarily implies a range of legislative discretion," Mr. Justice Hughes reaffirmed the basic principles of *Smyth v. Ames* and of other earlier cases to the effect that the company's right to just compensation was to be measured by "a fair return upon the reasonable value of the property at the time it is being used for the public."³⁷ He also emphasized that the finding of value was not controlled by artificial formulas, but that the Court required that there be "a reasonable judgment having its basis in a proper consideration of all relevant facts."

It was in the matter of land valuations that the *Minnesota Rate Cases* went beyond *Smyth v. Ames* and established new principles which have been subsequently followed by both commissions and courts. In the valuation prepared by the railroad, the claim for land values was based upon an estimate of what it would cost the railroad to reacquire its holdings of land at the present time; this was said to constitute an application of the reproduction-cost method. To the normal market value of similar adjacent lands there was added a sum which was said to represent the additional amount which a railroad corporation would have to pay to acquire that real estate. The figure so obtained was increased by the application of a "multiplier" representing severance damages (where the carrier took only a part of a larger parcel of land), cost of improvements on the land which were unnecessary to the railroad, easements in abutting property, and the general expenses of acquisition. For lands outside of the terminal properties, the "multiplier"

³⁴ "The cost of reproduction is not always a fair measure of the present value of a plant which has been in use for many years. The items composing the plant depreciate in value from year to year in a varying degree. Some pieces of property, like real estate for instance, depreciate not at all, and sometimes, on the other hand, appreciate in value. But the reservoirs, the mains, the service pipes, structures upon real estate, standpipes, pumps, boilers, meters, tools and appliances of every kind begin to depreciate with more or less rapidity from the moment of their first use. It is not easy to fix at any given time the amount of depreciation of a plant whose component parts are of different ages with different expectations of life. But it is clear that some substantial allowance for depreciation ought to have been made in this case. . . ." (*Ibid.*, 11.)

³⁵ *Ibid.*, 13-14.

³⁶ 230 U.S. 352-473 (1913). For present purposes the questions relating to federal and state jurisdiction in the regulation of railroad rates may be neglected.

³⁷ *Ibid.*, 434.

used was 3. For the terminal properties, the pursuit of this method resulted in the master's making an allowance of \$17,315,869.45 for properties which had originally cost the carrier \$4,527,228.76.³⁸

The attempt to apply the cost-of-reproduction method to the valuation of land was flatly rejected by Mr. Justice Hughes, whose extended discussion of land valuation sets forth principles that are still followed:

"Assuming that the company is entitled to a reasonable share in the general prosperity of the communities which it serves, and thus to attribute to its property an increase in value, still the increase so allowed, apart from any improvements it may make, cannot properly extend beyond the fair average of the normal market value of land in the vicinity having a similar character. Otherwise we enter the realm of mere conjecture. We therefore hold that it was error to base the estimates of value of the right-of-way, yards and terminals upon the so-called 'railway value' of the property. The company would certainly have no ground of complaint if it were allowed a value for these lands equal to the fair average market value of similar land in the vicinity, without additions by the use of multipliers, or otherwise, to cover hypothetical outlays. The allowances made below for a conjectural cost of acquisition and consequential damages must be disapproved; and, in this view, we also think it was error to add to the amount taken as the present value of the lands the further sums, calculated on that value, which were embraced in the items of 'engineering, superintendence, legal expenses,' 'contingencies' and 'interest during construction.'" ³⁹

Certain salient points in the above argument deserve especial emphasis: (1) The Court would not support the application of the cost-of-reproduction method (or presumably any other method) of valuation when the results thereof are patently unreasonable. (2) Methods of valuation must adhere closely to demonstrable facts and avoid unnecessary conjecture if the results are to receive the approval of the Court. (3) The implication is clear that the railroad is entitled to the benefit of the unearned increment arising from the increase in the value of its real-estate holdings, but the economic (and constitutional) merits of permitting carriers to have the benefit of this increase are not discussed. (4) The *maximum* sum at which the land holdings of a regulated business may be valued for rate-making purposes is set at "the fair average of the normal market value of land in the vicinity having a similar character." The methods of ascertaining this value are not set forth, though there is no doubt that mere opinion evidence will normally be regarded with suspicion.

4. PRESENT FAIR VALUE AND CHANGING PRICES

The period of World War I inaugurated an inflation of prices the effect of which continued until the beginning of the 1929 depression. The magnitude of these changes may be illustrated by reference to the movements of wholesale prices in the United States. The Bureau of Labor Statistics index number takes 1926 as 100: the index stood at 69.8 for 1913, rose to 154.4 for

³⁸ *Ibid.*, 448.

³⁹ *Ibid.*, 455.

1920, fluctuated between 114.0 and 92.9 from 1921 to 1929, and then fell precipitously to 64.8 for 1932, and since 1933 the index has moved upward with some interruptions. Rising prices presented in a critical fashion the issue between "actual costs" and "reproduction costs" as the dominant element in the determination of "present fair value."⁴⁰ In an increasing number of cases, commissions and courts were asked to make allowance for the rising price level through recognition of higher fair-value figures. What had been largely dicta in the *Consolidated Gas Company* case and the *Minnesota Rate Cases* was to become decision.⁴¹

THE NEWTON-CONSOLIDATED GAS COMPANY CASE. The question of changing price levels was squarely presented to the Court by the decision of the district court in a second controversy involving the eighty-cent gas rate for New York City.⁴² The lower court decision came on August 4, 1920 when postwar prices were at their peak. In an opinion which criticized the vagueness of the *Smyth v. Ames* rule, Judge Learned Hand asserted that there was no possibility of dealing intelligently with the question of valuation by assuming that both original cost and reproduction cost should be considered, and that, as soon as it was apparent that prices were not transitory, a reproduction-cost valuation on the basis of present prices should become the basis for fixing rates.⁴³ The Supreme Court, speaking through Mr. Justice McReynolds, affirmed the decree of the lower court setting aside the statutory rates with the observation, "When it became clear that the prescribed

⁴⁰ In the earlier cases, the Court was quite explicit in rejecting actual cost as the measure of the rate base (and by implication approving the use of reproduction cost), but the rejection of actual cost was not based upon the fact that the costs of construction had declined subsequent to the time of the construction of the utility property. The reason for discarding actual cost was to be found, rather, in the unreliable character of the figures: the accounting records were incomplete or suspect; there had been improper and excessive charges to capital accounts; there had been a want of prudence in making investments, mistakes in judgment which were held not chargeable against the public; and there had been inflation of capital accounts through the devices of the construction company, the exchange of securities for property, and the simple overissue of securities to promoters and others.

⁴¹ It may be noted that many of these cases reached the courts under circumstances which were not conducive to a restrained statement of the rights of the companies as against the public. There was no question about the acute financial distress in which many of the utilities found themselves. In some instances, there were franchise restrictions driving them toward bankruptcy. In other instances, the representatives of consumers and even the commissions resorted to the obstructionist tactics which had already become characteristic of the "valuation method" of regulating utility charges. Commissions were loath to find in the rising prices a necessity for enlarged earnings and were less than ingenuous in their analysis of the economic necessities of the situation. All of these circumstances were bound to influence the language of the court in passing upon the constitutionality of regulated prices.

⁴² *Newton v. Consolidated Gas Co.*, 258 U.S. 165 (1922).

⁴³ The language of Judge Hand is significant:

"... It must be owned that much of the discussion shows either a timidity or an inability to grasp any principle in dealing with the 'rate base.' With deference it appears to me to be merely an abandonment of any attempt to deal intelligibly with the question to say that cost of reproduction and the original cost are each elements to be considered. That statement can mean nothing whatever unless it is accompanied by a constructive rule which will establish some standard by which these may be used. It would be understandable to say that the two estimates should be averaged, but such a rule could obviously command no support, because it would correspond to no relevant considerations of policy. Merely to leave the question with a caution that several elements are to be considered is to abandon any effort to solve it. . . .

"The rule of the present reproduction cost, which is a necessary consequence of the foregoing argument, appears to me to have been either expressly or implicitly recognized in all the cases in which the Supreme Court has passed on these matters." (267 Fed. 231, 236 [S.D.N.Y., 1920].)

rate had yielded no fair return for more than a year and that this condition would almost certainly continue for many months the Company was clearly entitled to relief."⁴⁴

THE GALVESTON ELECTRIC CASE. The first case in which the Supreme Court definitely recognized the fact of a new "plateau" of prices as a factor in the determination of present fair value was the Galveston street railway case.⁴⁵ The company contended that the future plateau of prices would stabilize between 60 and 70 per cent above the prewar level, while the city argued that the current level of prices was temporary and that a return to the prewar level was to be expected. There was no controversy as to the method of valuation to be employed, for both parties agreed to an undepreciated "reproduction cost on the historical basis" (that is, what the property should have cost on the basis of the prices prevailing at the time the specific items of the property were purchased or constructed, a figure usually designated "historical cost," or "estimated original cost") of \$1,715,825. The master and the lower court sought a compromise between the claims as to the future level of prices and adjusted the historical reproduction cost figure by $33\frac{1}{3}$ per cent to bring it in line with the prevailing and prospective prices.⁴⁶

In the period of uncertainty during and following the war, original-cost figures seemed remote and unreal. However, commissions and courts alike hesitated to abandon cost completely and base the rates directly upon contemporary values, since existing prices were thought to be temporary and fugitive. In the *Galveston* case, the basic valuation rested on estimated original-cost figures, with the exception of land holdings which were included at present value.⁴⁷ No attempt was made to price the items of an inventory at prices characteristic of the date of the rate order, but instead the simpler device of a blanket percentage adjustment was resorted to. On appeal, the Supreme Court refused to find an error in the partial adjustment for contemporary prices involved in the $33\frac{1}{3}$ per cent figure of the lower court.⁴⁸

⁴⁴ 258 U.S. 165, 176.

⁴⁵ *Galveston Elec. Co. v. Galveston*, 258 U.S. 388 (1922).

⁴⁶ The district court's valuation of \$1,626,061 was derived as follows:

Historical reproduction cost (as agreed)	\$1,715,825
Less: Land at market value, and property acquired after Jan. 1, 1915, at actual cost	425,117
	\$1,290,708
Plus: $33\frac{1}{3}\%$ increase for price change	\$430,236
Land and additions after Jan. 1, 1915 (as deducted above)	425,117
	\$855,353
	\$2,146,061
Less: Accrued depreciation to 1921	\$390,000
Increase in accrued depreciation due to $33\frac{1}{3}\%$ appreciation in property	130,000
	520,000
Total base value	\$1,626,061

⁴⁷ The estimated cost of the lands was approximately \$15,000; the direct court had included it at a market-value figure of \$58,836.

⁴⁸ Other issues in the case are not pertinent to the present discussion. The Court's rejection of a claim for going concern value based upon an estimate of past deficits has made the decision a classic with reference to the treatment of intangible values. The treatment of brokerage fees, the allowance for depreciation and maintenance expenses, and income tax payments were also discussed.

THE 1923 DECISIONS. *The Southwestern Bell Telephone case*. Within a three-week period in 1923, the Court was called upon to decide three cases presenting the issue of fair value and changing prices in such an acute way as to create a division in the Court. *The Southwestern Bell Telephone Company* case grew out of an order of the Missouri Commission on August 4, 1919, requiring a reduction in exchange service rates and a discontinuance of installation and moving charges. The company submitted evidence to show that the reproduction cost new of its Missouri properties was \$35,100,471; the reproduction cost less depreciation, \$31,355,278; and the book cost, \$22,888,943. The Commission made no attempt to value the property as of the valuation date or to criticize in detail the presentation of the company. The Commission had, however, in 1913, 1914, and 1916, made valuations of three of the important exchanges in the state, and it undertook to test the reliability of the company's figures by these earlier valuations. On the basis of these comparisons, the Commission found that the company's reproduction-cost-new figures were 172.4 per cent of the Commission's earlier valuation; and the cost-of-reproduction-less-depreciation estimates were 153.7 per cent of the Commission's figures. Even the book-cost figures were criticized for containing allowances for unused properties and for failing properly to reflect the accrued depreciation. After making the adjustments indicated by the above comparisons, the Commission concluded that the value of the company's property used in the state was not in excess of \$20,400,000, and that was found to be the rate base.⁴⁹ The Commission's order was sustained by the Missouri courts.⁵⁰ On appeal to the Supreme Court, the decisions of both the state courts and the Commission were reversed by the majority decision. Mr. Justice McReynolds' opinion⁵¹ has been widely discussed as an instance where the Court's condemnation of the Commission's rates was based upon a disapproval of the Commission's methods and procedure, and as a precedent favoring the use of reproduction-cost estimates as a measure of present value when rising prices have established a new and higher plateau of prices.⁵²

This interpretation may be questioned on a number of counts. There is

⁴⁹ *Southwestern Bell Tel. Co. v. Comm.* 262 U.S. 276, at pages 282-287. Decided May 21, 1923.

⁵⁰ 233 S.W. 425 (1921).

⁵¹ Mr. Justice McReynolds delivered the opinion of the majority, consisting of Mr. Chief Justice Taft and Justices McKenna, Van Devanter, Sutherland, Butler, and Sanford. Mr. Justice Brandeis, with Mr. Justice Holmes concurring, dissented from the opinion, though not from the judgment.

⁵² "Obviously, the Commission undertook to value the property without according any weight to the greatly enhanced costs of material, labor, supplies, etc., over those prevailing in 1913, 1914, and 1916. As matter of common knowledge, these increases were large. Competent witnesses estimated them as 45 to 50 per centum.

"It is impossible to ascertain what will amount to a fair return upon properties devoted to public service without giving consideration to the cost of labor, supplies, etc., at the time the investigation is made. An honest and intelligent forecast of probable future values made upon a view of all the relevant circumstances, is essential. If the highly important element of present costs is wholly disregarded such a forecast becomes impossible. Estimates for tomorrow cannot ignore prices of today.

"Witnesses for the Company asserted—and there was no substantial evidence to the contrary—that, excluding cost of establishing the business, the property was worth at least 25% more than the Commission's estimates, and we think the proof shows that for the purposes of the present case the valuation should be at least \$25,000,000." (262 U.S. 276, 287-288.)

no apparent reason to interpret these remarks of the majority opinion other than as an explanation of why the Court did not find the figures of the Commission persuasive of the "fair value" for purposes of determining confiscation. Moreover, although the Court concluded, on the basis of the evidence before it, that the fair value of the property was \$25,000,000, an increase of more than 20 per cent over that of the Commission, it may be noted that this figure was \$6,000,000 below the reproduction cost less depreciation claimed by the company, and only \$2,000,000 in excess of the actual book cost of the property. Certainly the fair value was not based primarily upon reproduction cost, and the adjustment to the higher level of prices prevailing in 1923 was only partial. But there is still a third bit of evidence as to the dangers of the obvious and simplified interpretation of the Court's remarks, namely that Justices Brandeis and Holmes, outspoken critics of the *Smyth v. Ames* rule and strenuous advocates of the prudent-investment basis for testing the confiscatory character of utility rates, found the rates established by the Missouri Commission to be confiscatory on a prudent-investment basis. A weighing of the positive significance of the majority's decision must await a consideration of two other cases decided three weeks later by the same court.

The Georgia Railway and Power case. On December 30, 1921, the Railroad Commission of Georgia ordered the Georgia Railway and Power Company to reduce its maximum rate for gas in Atlanta from \$1.65 to \$1.55 per 1,000 cubic feet.⁵³ The company contended that its physical property should be valued on the basis of reproduction cost at the time of regulation less depreciation, and that the value of its property was at least \$9,500,000. The Commission found a rate base of \$5,250,000, its value being derived by taking the property in existence January 1, 1914, at a sum which was substantially its actual cost or its reproduction cost as of that date, with land included at present-value figures. Most of the plant had been installed prior to 1914, and the construction costs were in 1921 about 70 per cent higher than those of 1914.⁵⁴ Despite the company's claim that its property should have been valued at its replacement cost in November, 1921, and its contention that the Commission had ignored the great increase in construction costs in finding the rate base, Mr. Justice Brandeis could find no basis for overruling the lower court:

"The case is unlike *Missouri ex rel. Southwestern Bell Telephone Co. v. Public Service Commission*, ante, 276. Here the Commission gave careful consideration to the cost of reproduction, but it refused to adopt reproduction cost as the measure of value. It declared that the exercise of a reasonable judgment as to the present 'fair value' required some consideration of reproduction costs as well as of original costs, but that 'present fair value' is not synonymous with 'present replacement cost,' particularly under abnormal conditions. That part of the rule which declares the utility entitled to the

⁵³ 262 U.S. 625. June 11, 1923. Mr. Justice Brandeis wrote the opinion for the majority, Mr. Chief Justice Taft and Justices Holmes, Van Devanter, McReynolds, Sutherland, Butler, and Sanford concurring. Only Mr. Justice McKenna dissented.

⁵⁴ It is significant that this was substantially the method used by the Missouri Commission in the *Southwestern Bell Telephone Company case*.

benefit of increases in the value of property was, however, specifically applied in the allowance of \$125,000, made by the Commission to represent the appreciation in the value of the land owned. The lower court recognized that it must exercise an independent judgment in passing upon the evidence; and it gave careful consideration to replacement cost. But it likewise held that there was no rule which required that, in valuing the physical property, there must be 'slavish adherence to cost of reproduction, less depreciation.' It discussed the fact that, since 1914, large sums had been expended annually on the plant; that part of this additional construction had been done at prices higher than those which prevailed at the time of the rate hearing; and it concluded that, 'averaging results and remembering that values are . . . matters of opinion . . . no constitutional wrong clearly appears.'

"The refusal of the Commission and of the lower court to hold that, for rate-making purposes, the physical properties of a utility must be valued at the replacement cost, less depreciation, was clearly correct."⁵⁵

The Bluefield case. On the same day, Mr. Justice Butler delivered the Court's opinion in the *Bluefield Water Works & Improvement Company v. Public Service Commission of West Virginia*, reversing the decision of the West Virginia Supreme Court of Appeals, and thereby setting aside rates fixed by that Commission.⁵⁶ The Commission had fixed a value of \$460,000, and finding the company to be earning only 3.87 per cent return, allowed an increase in rates calculated to produce a return of 6 per cent after allowing for depreciation.⁵⁷ The company protested both the finding of value and the rate of return. The language of the Court indicated that it was of the opinion that the Commission's valuation, arrived at in substantially the same manner as in the two previous cases, could not be sustained.⁵⁸ Yet despite the condemnation of the Commission's valuation methods and results, it is apparent that this was only dicta, for the Court, accepting the Commission's valuation, found the rate of return inadequate, and overruled the lower court and the Commission on that ground.⁵⁹

Mr. Justice McKenna's dissent. It was the dissenting opinion of Mr. Justice McKenna in the *Georgia Railway & Power Company* case that served to bring to a sharp focus the controversy within the Court as to the meaning and significance of the rule of *Smyth v. Ames*. He professed himself unable to reconcile the contrariety of decision involved in the acceptance of the method and result of the Commission in that case, for in his opinion that Commission had followed substantially the same method as had the commissions in the *Southwestern* and *Bluefield* cases. He not only refused to recognize the distinction that in the *Georgia* case the Commission had considered reproduction cost only to reject it, for the commissions in the other cases had had reproduction-cost figures before them; he went further and

⁵⁵ 262 U.S. 625, 629-630.

⁵⁶ 262 U.S. 679. Mr. Chief Justice Taft and Justices McKenna, Holmes, Van Devanter, McReynolds, Sutherland, and Sanford concurred in the opinion. Mr. Justice Brandeis concurred in the judgment, but dissented from the opinion, for the reason given in his separate opinion in the *Southwestern Bell Telephone Company* case.

⁵⁷ *Ibid.*, 692.

⁵⁸ *Ibid.*, 692-693, 694-695.

⁵⁹ *Ibid.*, 689-692.

accepted the company's contention that value should be based upon reproduction cost.⁶⁰

The significance of the 1923 decisions. In summary, it can be said that in these three cases decided within three weeks, the Court was called upon to consider the rates established by three state commissions at a time when the price level and the level of construction costs were substantially higher than those that had prevailed in earlier years, when most of the properties had been constructed. Two commissions rested their determination of the rate base on valuations in which physical property other than land was priced at prewar prices, the influence of the higher price level being recognized only by the inclusion of land at its market value as of the date of regulation and of recent additions at their actual cost. In the third case, the *Southwestern Bell Telephone* case, the Commission had corrected the company's current valuation figures by adjustment to its own prewar findings. In the *Georgia Railway and Power* case, the Supreme Court upheld the Commission; in the other two, the rates were held to be confiscatory. Two distinctions are to be noted: the Court points out that in the *Georgia Railway and Power* case, the Commission gave "careful consideration" to reproduction cost, although it was apparent that reproduction cost had almost no weight in the Commission's final value; in the *Bluefield* case, the Court found the rate of return inadequate.

What conclusions are to be drawn from these three decisions? Certainly not that the Court based its decisions on defects in the commissions' methods of valuation, for the methods of determining the rate base were substantially the same in each case. The distinction that the Commission in the *Georgia* case gave "careful consideration" to the reproduction cost did not conceal what was readily apparent, that reproduction cost had almost no weight in its finding of value. If the Court's decisions had rested upon the methods and procedures of the commissions, it is reasonable to suppose that the "consideration" of the elements of the "fair-value rule" necessary to escape judicial disapproval could scarcely be satisfied by a simple statement that such factors had been accorded "due consideration" in the commission's determination. This interpretation is confirmed by the attitude of Mr. Justice McKenna, whose insistence on the contrariety of the decisions finds support in their language. But, looking through the language to the substance, the most reasonable basis for reconciling these cases⁶¹ is to conclude that the Supreme Court upheld the commission's order in one case and rejected the commissions' findings in the others, not because it disapproved of the *methods* followed, but because it was of the opinion that the *effects* of the rate orders were confiscatory in two cases and not in the third.⁶² In support of this con-

⁶⁰ 262 U.S. 625, 636-638.

⁶¹ It is not to be assumed that all decisions of the Court can be "reconciled"; changes in the times and changes in the personnel of the Court bring changes in decisions which are not always recognized by a formal overruling of earlier precedents. But where three decisions are handed down by the same Court within a period of three weeks, with every indication that the majority of the Court is of the opinion that the opinions are consistent one with another, it is only reasonable to seek a common denominator which will render the decisions harmonious.

⁶² It is doubtful if, in these three cases, adequate support can be marshaled for the thesis that

clusion may be cited the positions of Justices Brandeis and Holmes who, while rejecting the *Smyth v. Ames* precedents which the majority followed, nevertheless concurred with the majority in finding confiscatory (on the basis of cost or prudent investment) the rates established by the commissions in the *Southwestern* and *Bluefield* cases.

And finally, it may be noted that it is even less possible to find in any of these 1923 decisions support for the oft-repeated contention that, when a new and higher plateau of prices has become established, the rate base must be founded upon reproduction cost less depreciation.

5. RECENT ELABORATIONS IN THE PRINCIPLES OF PRESENT FAIR VALUE

REINVESTED SURPLUS AND THE NEW YORK TELEPHONE COMPANY CASE. The year 1926 produced two significant decisions in the *Smyth v. Ames* series. The first case grew out of a refusal of the Board of Public Utility Commissioners of New Jersey to permit an increase in telephone rates by the New York Telephone Company;⁶³ its conclusions were as significant with respect to the importance of controlling operating expenses as with respect to the valuation of utility property. The Board found that the value of the company's New Jersey property was \$76,370,000 as of June 30, 1924; that 7.53 per cent constituted a fair rate of return; that the company's charge for current depreciation in 1924, \$3,452,000, was excessive, and that \$2,678,000 would suffice; and that the net earnings for 1924 would be \$4,449,000, which was \$1,300,000 less than a fair return. But the Board also found that the reserve for depreciation was excessive by some \$4,750,000, and that any deficiency in earnings under the prescribed rates should be made up out of this excess of the depreciation reserve. As the Supreme Court saw the situation, the Board was asking the company, in view of its excessive depreciation reserve, to accept a diversion of \$2,631,286 from its appropriations for current depreciation in order that that sum might be added to its otherwise inadequate fair return.⁶⁴

Here for the first time the Court was presented with the question whether present regulation of rates could take into consideration the fact that in the past the company had earned more than a fair return upon the value of its property, and its response was in the negative. Drawing a parallel with its earlier decisions that inadequacy of past earnings could not be made the basis for a claim that contemporary earnings were constitutionally inadequate, the Court ruled that property acquired out of past earnings, when used to serve the public, was entitled to a fair return, however excessive the earnings may have been at the time the surplus funds were accumulated.⁶⁵ This case

"the ultimate measure of confiscation is whether or not a fair return is realized upon the actual net investment in the properties." (Cf. Bauer, *Effective Regulation of Public Utilities*, pp. 99-100.)

⁶³ 271 U.S. 23. Decided April 12, 1926.

⁶⁴ *Ibid.*, 30.

⁶⁵ ". . . Constitutional protection against confiscation does not depend on the source of the money used to purchase the property. It is enough that it is used to render the service. . . . The customers are entitled to demand service and the company must comply. The company is entitled to just compensation and, to have the service, the customers must pay for it. The relation

is the more significant in that it involved not the investment of earnings that would otherwise have been available for dividend payments, but revenue which was collected for the specific purpose of compensating the company for an operating expense. In short, the consumers, having provided the property, are compelled to pay a return on that property. The *New York Telephone Company* case affords a warning of the necessity of maintaining a strict surveillance over company claims for depreciation, which should be especially compelling to those commissions that have been liberal in their acceptance of the companies' figures for current depreciation charges on the theory that generous allowances would ultimately benefit consumers by providing properties upon which no return need be earned.

MCCARDLE v. INDIANAPOLIS WATER COMPANY. The majority decision of the Supreme Court in *McCardle v. Indianapolis Water Company*⁶⁶ has given rise to more controversy than most of the fair-value decisions. Hailed by the utilities as establishing reproduction cost as the measure of value when the trend of prices is neither upward nor downward, criticized by Mr. Justice Brandeis for its seeming acquiescence in the lower court conclusion which made "a finding of reproduction cost tantamount to a finding of value" and for its seeming acceptance, despite a disclaimer to the contrary, of "spot" reproduction cost, and generally regarded by regulatory commissions as an authoritative statement of the Court's views on the subject of valuation second only to *Smyth v. Ames*—the decision has had an influence on the theory and practice of regulation out of all proportion to its importance.⁶⁷

In June, 1923, the company sought an increase in rates, which the Commission granted in part, and obtained rates calculated to yield a return of 7 per cent on a base of \$15,260,400. The Commission's valuation of the physical property was based on a valuation derived by applying unit prices representing the average level of labor and material prices for the ten-year period ending December 31, 1921. The Company sought to have the valuation made on the basis of the substantially higher prices that resulted from taking an average for the ten years ending with 1923. On the Company's appeal, the

between the company and its customers is not that of partners, agent and principal, or trustee and beneficiary. . . . The revenue paid by the customers for service belongs to the company. The amount, if any, remaining after paying taxes and operating expenses including the expense of depreciation is the company's compensation for the use of its property. If there is no return or if the amount is less than a reasonable return, the company must bear the loss. Past losses cannot be used to enhance the value of the property or to support a claim that rates for the future are confiscatory. . . . And the law does not require the company to give up for the benefit of future subscribers any part of its accumulations from past operations. Profits of the past cannot be used to sustain confiscatory rates for the future. . . ." (*Ibid.*, 31-32.)

⁶⁶ 272 U.S. 400. Decided November 22, 1926. Mr. Justice Butler delivered the opinion for the majority consisting of Mr. Chief Justice Taft and Justices Van Devanter, McReynolds, Sutherland, and Sanford. Mr. Justice Holmes concurred in the result. Mr. Justice Brandeis, with Mr. Justice Stone concurring, dissented.

⁶⁷ The company had been often before the Commission whose findings in the earlier cases complicated the present proceeding: as of January 1, 1917, the Commission had fixed the value of the property at not less than \$9,500,000 for the purpose of authorizing a \$650,000 stock dividend; in 1918, the Commission granted an increase in rates to permit a return of 6 per cent on a base of \$9,664,000; in a proceeding for the approval of security issues the Commission found the value of all the company's property as of October 31, 1922, to be \$16,455,000. (P.U.R. 1917E, 556; 1919A, 448; 1923D, 449.)

district court found a fair value of \$19,000,000 and enjoined the Commission's rates as confiscatory. It may be noted that this case presented no question of different methods of determining the rate base, for the Commission, the company, and the lower court had each based its determination of value upon reproduction-cost estimates. And though there was much discussion of whether "spot" prices should prevail in determining the cost of reproduction in a period of relatively stable prices, that discussion was largely dicta since the prices actually used could have been derived from an average of prices of labor and materials for the ten-year period ending with 1923. The Commission's finding of value was rejected as inconclusive in resolving the question of confiscation, on the ground that consideration should be given to prices which are expected to prevail during the future (there was also some criticism of the Commission's allowances for working capital, going value, and water rights); and the Court, largely on the basis of the evidence in the testimony of the Commission's engineer and in previous determinations by the Commission, accepted the finding of the district court that the fair value was not less than \$19,000,000.⁶⁸

Considering the uses that have been made of the majority decision in the *McCardle* case, the importance of the case lies in what the Court said rather than in what it decided. In the language of that majority opinion appear statements emphasizing reproduction cost at present prices:

"But in determining present value, consideration must be given to prices and wages prevailing at the time of the investigation; and, in the light of all the circumstances, there must be an honest and intelligent forecast as to probable price and wage levels during a reasonable period in the immediate future. In every confiscation case, the future, as well as the present must be regarded. . . ."⁶⁹

While it would appear that a proper consideration for the circumstances peculiar to the case would render this decision of little importance, it must be recognized that the pronouncements of the majority opinion have been widely accepted as describing the proper procedures for both courts and commissions. This influence is due less to the authority and soundness of these pronouncements (for essentially they are little better than dicta,⁷⁰ considering that commission, company, and lower court had all accepted reproduction cost as the principal evidence of the fair value), than to the patent weakness of *Smyth v. Ames* as a guide to the mazes of utility rate regulation. Indeed, in comparison with the vague and inconclusive character of the usual formulation of the "fair-value rule," the seeming concreteness and definiteness of the words of Mr. Justice Butler appeared to offer the "formula" which commissions and lower courts are always seeking. However, later decisions have rendered these 1926 opinions of less consequence than they seemed destined to possess in the 1920's.

⁶⁸ More than eleven years later, Mr. Justice Black, in a dissenting opinion in *McCart v. Indianapolis Water Co.* (302 U.S. 419, 430-431), had occasion to comment on the essential unfairness of this result of the application of the present-fair-value method.

⁶⁹ 272 U.S. 400, 408. See also pp. 410 to 412.

⁷⁰ It may also be noted that Mr. Justice Holmes, who concurred with Mr. Justice Brandeis in the *Southwestern Bell Telephone* case, was able to concur with the majority in this decision.

FAIR VALUE AND DEPRECIATION.—UNITED RAILWAYS V. WEST.⁷¹ Though the *United Railways* case developed no new principles with respect to the rate base, the application of the fair-value principle to charges for operating expenses compels a critical consideration of the decision. The majority held, over the vigorous protests of three dissenting justices, that the logic of the fair-value rule required that the allowance for accruing depreciation be based upon the present value of the depreciating assets, not on their actual cost.⁷² The revolutionary character of this expansion of the fair-value rule, and its potentially disturbing effects upon the regulation of utility charges, as well as its foundations in logic and economics, will be explored when the subject of depreciation expense is under consideration.⁷³ For the moment, it is enough to note that this particular pronouncement of the Court has been quite generally ignored by both commissions and utilities.⁷⁴

THE JUDICIAL AND LEGISLATIVE SPHERES.—*The Los Angeles Gas case*. The Supreme Court's decision in the case of *Los Angeles Gas & Electric Corporation v. Railroad Commission of California*⁷⁵ marks a turning point in the application of the fair-value rule. Its importance derives from the Court's explicit recognition of what had been implicit in most of its earlier decisions—that there exists a fundamental distinction between the functions of courts and commissions in the regulation of utility rates.⁷⁶

The significance of the Court's opinions is further enhanced by the California Commission's specific statement that it had adhered to the so-called "historical-cost" rate base,⁷⁷ and by the dissenting opinion of Mr. Justice Butler, who asserted that the Commission's order should be set aside because the theories followed were contrary to the Supreme Court's decisions.⁷⁸ Nevertheless, following an examination of the procedure, the evidence presented, and the findings in the proceedings before the Commission, Mr. Chief Justice Hughes, in the majority opinion, stated:

⁷¹ 280 U.S. 234-291 (1930). The opinion of the Court was given by Mr. Justice Sutherland, with Justices Van Devanter, McReynolds, Butler, and Sanford concurring. Mr. Justice Brandeis presented a dissenting opinion in which Mr. Justice Holmes joined. Mr. Justice Stone also dissented.

⁷² *Ibid.*, 253-254.

⁷³ Chapter XVIII.

⁷⁴ Doubtless a period of rising price levels, with accompanying increases in replacement costs, would lead utility companies to press for larger depreciation allowances on the strength of this precedent.

⁷⁵ 289 U.S. 287-334 (1933). Mr. Chief Justice Hughes delivered the opinion of the Court, with Justices McReynolds, Brandeis, Stone, Roberts, and Cardozo concurring. Mr. Justice Butler wrote a dissenting opinion, in which Mr. Justice Sutherland joined. Mr. Justice Van Devanter took no part in the decision.

⁷⁶ The Railroad Commission of California, believing that rates established in 1928 to yield a return of 7.5 per cent (P.U.R. 1929C, 3) were actually affording a much higher return, entered an order in November, 1930, directing the company to reduce its rates for natural gas. (P.U.R. 1931A, 132.)

The Commission determined the rate base on historical cost, with land valued as of December 31, 1929, the date of valuation. The historical cost was derived from a rate base established in 1917, with net additions at actual cost as shown by the company's books. The Commission found a rate base of \$65,500,000, without any deduction for accrued depreciation which was estimated at \$7,050,000. The company claimed a fair value of \$95,767,351, and was successful in securing an interlocutory injunction in the district court; but on final hearing, the bill was dismissed, whereupon the company appealed to the Supreme Court.

⁷⁷ In a dissenting opinion, Commissioner Decoto had insisted that the Commission's disregard of the principles established by the Supreme Court had resulted in the establishment of confiscatory rates.

⁷⁸ 289 U.S. 287, 326-327.

"We approach the decision of the particular questions thus presented in the light of the general principles this Court has frequently declared. We have emphasized the distinctive function of the Court. We do not sit as a board of revision, but to enforce constitutional rights. . . . The legislative discretion implied in the rate-making power necessarily extends to the entire legislative process, embracing the method used in reaching the legislative determination as well as that determination itself. We are not concerned with either, so long as Constitutional limitations are not transgressed. When the legislative method is disclosed, it may have a definite bearing upon the validity of the result reached, but the judicial function does not go beyond the decision of the constitutional question. That question is whether the rates as fixed are confiscatory. And upon that question the complainant has the burden of proof and the Court may not interfere with the exercise of the State's authority unless confiscation is clearly established."⁷⁹ This recognition of the distinctive character of the Court's functions in testing the confiscatory character of the rates established by state authority and of the fact that the Court is concerned solely with the effect of the rates so established, that is, whether confiscatory or nonconfiscatory, rather than with the procedure by which such rates are determined, is as explicit as language permits.⁸⁰ Thus, if rates established by legislative authority escape being confiscatory, the particular rates prescribed are within the discretion of the legislature; and, what is even more important, this legislative discretion is said to extend "to the entire legislative process, embracing the method used in reaching the legislative determination as well as that determination itself." This reassertion of first principles constituted a clear invitation to legislatures and commissions to devise and adopt such methods and procedures as should appear appropriate for the efficient discharge of their regulatory functions.⁸¹

Applications of the Los Angeles precedent in 1934. In the next two fair-value cases to come before it, the Supreme Court displayed the same temper that characterized its decision in the *Los Angeles Gas* case. The case of *Lindheimer v. Illinois Bell Telephone Company*⁸² was the second appearance be-

⁷⁹ *Ibid.*, 304-305.

⁸⁰ This conclusion finds added support in the manner in which the Court disposed of questions respecting the appropriate allowances for particular items in the rate base. The controversy regarding the proper allowance for going-concern value reveals most clearly the Court's understanding that its testing of the confiscatory character of rates is quite distinct from the Commission's problem in prescribing reasonable rates. The Court recognized that going value might be included in the valuation of a utility company to determine if rates are confiscatory; but in reviewing its own decisions where going value had been allowed, it emphasized that it was not concerned with the adequacy or inadequacy of the allowance for any specific item, but only with whether the total effect of the rates was "to deny to the owner of the property a fair return for its use." The Court concluded that, though the Commission had made no specific allowance for going value, the total rate base, after deductions for items not appropriately included in present value for testing confiscation was sufficient to cover any proper allowance for going value. (*Ibid.*, 314-317.)

⁸¹ Of course, the Court's disclaimer of interest in the commission's procedure in no way relieves the commission of conforming to the rudimentary requirements of "due process," that of affording a full, fair and open hearing and of finding support for its decisions in the evidence presented.

⁸² 292 U.S. 151 182 (1934) Mr. Chief Justice Hughes delivered the opinion for a court composed of Justices Van Devanter, McReynolds, Brandeis, Sutherland, Stone, Roberts, and Cardozo. Mr. Justice Butler filed a concurring opinion.

In the first appeal to the Supreme Court the case was remanded with instructions to make

fore the Court of the long litigation that revolved around the fixing of telephone rates for Chicago. On the basis of elaborate findings as to the fair value of the utility's property, the lower court concluded that the rates established were confiscatory. However, instead of undertaking a detailed review of the voluminous testimony respecting the value of the utility's property used in its intrastate business, the Supreme Court addressed itself to only two questions: (1) the experience of the company under the existing rates and (2) the relation of lower earnings to (a) operating expenses and (b) the annual allowances for depreciation.

A comparison of the net income available from intrastate business as shown by the company's books, the net income on intrastate business with adjustments for those operating expenses which the lower court found excessive, and the amount of the net income which was found to be necessary to avoid confiscation, led the Court to the conclusion that the acceptance of the findings as to fair value and return would indicate "that when the Commission's order was made in 1923, not only the new rates, but the existing rates as well were grossly confiscatory; that appellee was receiving under the existing rates, according to its books, a net return of \$5,347,533 when it was entitled to nearly \$4,000,000 more, or \$9,315,000, to prevent its property from being confiscated," and that a similar situation existed in the subsequent years. Yet during the period when these "confiscatory rates" were in effect, the company paid 8 per cent dividends upon its stock, increased its capital stock from \$70,000,000 in 1923 to \$150,000,000 in 1930, increased its "fixed-capital reserves" from \$37,575,004 in 1923 to \$69,242,667 in 1931, and augmented the book cost of "total plant and general equipment" from \$145,084,084 at the end of 1923 to \$291,259,580 at the end of 1931! Over 30 per cent of the operating expenses of each year were attributable to depreciation expense, and yet the company claimed that the existing depreciation in its property amounted to less than one-third of its accumulated reserve for depreciation. Said the Court: "It appears that the depreciation reserve to a large extent represents provision for capital additions, over and above the amount required to cover capital consumption."⁸³ Hence the excessive annual charges for depreciation were treated as an offset to the reductions in income resulting from the application of the new rates.

In the light of these facts, common sense compelled the Court to set aside the fair-value findings and uphold the rates fixed by the Commission's order:

"This actual experience of the Company is more convincing than tabulations of estimates. In the face of that experience, we are unable to conclude that the Company has been operating under confiscatory intrastate rates. Yet, as we have said, the conclusion that the existing rates have been confiscatory—and grossly confiscatory—would be inescapable if the findings below were accepted. In that event, the Company would not only be entitled to resist reduction through the rates in suit, but to demand, as a constitutional right, a large increase over the rates which have enabled it to operate with outstand-

specific findings as to interstate and intrastate properties and the propriety of the payments made by the Illinois Company to its affiliated companies, the American Telephone & Telegraph Company and the Western Electric Company.

⁸³ *Ibid.*, 174.

ing success. Elaborate calculations which are at war with realities are of no avail. The glaring incongruity between the effect of the findings below, as to the amounts of return that must be available in order to avoid confiscation, and the actual results of the Company's business makes it impossible to accept those findings as a basis of decision."⁸⁴

The decision of Mr. Justice Cardozo in *Dayton Power & Light Company v. Public Utilities Commission of Ohio*⁸⁵ affords a further example of the Court's concern with the results under the rates prescribed rather than with the reasoning and methods of the lower court and commission—for the Court refused to find in the dicta of the state court, or in errors in the treatment of particular items in the valuation, any basis for overthrowing the rates prescribed by state authority. Small comfort for those who would exploit the inflationary possibilities in the valuation method is to be found in these sentiments:

"Dissection of the several items that have been criticized in the appellant's argument has thus brought us to the conclusion that the order of the Commission, whether generous or ungenerous, is at all events not confiscatory, and hence not subject to revision here. But the conclusion has reinforcements that come to it from other avenues of approach. In a statement put in evidence by the appellant, the rate of return under the new schedule is said to be $1\frac{28}{100}$ per cent of the fair value of the property. Under the earlier schedule the revenue was even less. So modest a rate suggests an inflation of the base on which the rate has been computed. It is a strain on credulity to argue that the appellant, when putting into effect a new schedule of charges was satisfied with one productive of so meager a return. The same surprise is excited when we consider what it claims as to the fair value of the gas delivered at the gates. All that the affiliated seller asks is 45 cents per thousand cubic feet, yet according to the appellant's figures nearly 7 cents more, or a price of about 52 cents, is necessary to protect the seller against the wrong of confiscation. The argument proves too much; the valuations are discredited by the teachings of experience."⁸⁶

Judicial condemnation of the use of price indices by the Maryland Commission. The *Los Angeles Gas* case and those which immediately followed it contained the promise of a new freedom for the regulatory commission: for while the Supreme Court had been quite generally conscious that "the legislative discretion implied in the rate-making power necessarily extends to . . . the method used in reaching the legislative determination as well as that determination itself,"⁸⁷ the lower courts had been much less hesitant in im-

⁸⁴ *Ibid.*, 163-164.

⁸⁵ 292 U.S. 290-392 (1934). The majority was composed of Mr. Chief Justice Hughes and Justices Brandeis, Stone, Roberts, and Cardozo. Justices McReynolds and Butler concurred in the result. Justices Van Devanter and Sutherland took no part in the decision.

⁸⁶ *Ibid.*, 311-312.

⁸⁷ The *O'Fallon* case, which is sometimes cited in this connection, is only an apparent exception to this statement. In that instance, the Court reversed the Interstate Commerce Commission's recapture order, not on the ground that a constitutional guarantee was infringed, but because the Commission had failed to comply with the statutes. By the recapture clause and the Valuation Act, Congress had directed the Commission to determine value by ascertaining the original cost to date, the cost of reproduction new, and the cost of reproduction less depreciation.

posing their ideas of the proper procedure on regulatory bodies. The doctrine of the *Los Angeles* case constituted a rebuke to those who were inclined to neglect the distinction between the spheres of the legislative and judicial branches of the government, and an invitation to commissions and legislatures to address themselves to the task of formulating more satisfactory regulatory techniques. The salutary effects of these decisions have been partly neutralized by the majority decision in *West v. Chesapeake & Potomac Telephone Company*,⁸⁸ which reversed the Commission's order with the observation that the method followed was "inapt" and "erroneous."

The Commission began with a valuation made by a lower federal court as of December 31, 1923, and by the use of a composite price index translated this value (less accrued depreciation) and the net investment for each subsequent year into corresponding values as of December 31, 1932; from this gross value as of 1932, the Commission deducted the sum of the 1923 depreciation reserve and the subsequent annual accretions to the reserve, each converted into 1932 figures; the addition of an allowance for working capital gave the rate base for 1933. It was this method which the majority of the Court characterized as "inappropriate for obtaining the value of a going telephone plant." Four objections were raised to this procedure: that the indices (individually) were not prepared as an aid to the appraisal of the property; that the wide variation in the results from the application of the different indices impugned their accuracy; that the "Commission attempted a rule of thumb corrective, by weighting the several indices upon a principle known only to itself"; and that the result of the Commission's method was affected by sudden shifts in price level.⁸⁹

The impropriety of the Court's action in overthrowing the action of the Commission was clearly presented to the members of the Court by Mr. Justice Stone's dissenting opinion.⁹⁰ In answer to the criticisms of the Commission's

The Court held that the Commission, in failing to consider reproduction cost, had not acted within its statutory powers. (*St. Louis & O'Fallon Ry. Co. v. U.S.*, 279 U.S. 461 [1929].)

⁸⁸ 295 U.S. 662 (1935). Mr. Justice Roberts announced the decision for a majority composed of Mr. Chief Justice Hughes and Justices Van Devanter, McReynolds, Sutherland, and Butler. Mr. Justice Stone dissented, with Justices Brandeis and Cardozo concurring. There was no word of explanation from the Chief Justice as to how this decision is to be reconciled with his pronouncements in the *Los Angeles* case.

⁸⁹ In holding that "the Commission's order violates the principle of due process as the measure of value adopted is inadmissible," Mr. Justice Roberts attempted a reconciliation with the *Los Angeles* and later decisions:

"... Nothing said in . . . these cases, justifies the claim that this court has departed from the principles announced in earlier cases as to the value upon which a utility is entitled to earn a reasonable return or the character of evidence relevant to that issue. It is apparent from what has been said that here the entire method of the Commission was erroneous and its use necessarily involved unjust and inaccurate results." (*Ibid.*, 674-675.)

⁹⁰ The issue was actively pressed that the Court had not passed upon whether the rates established by the Commission were confiscatory. Despite the fact that it could not uphold the finding of the lower court, the Court had permitted the lower court's injunction to stand. It was said that the lower court's finding made insufficient allowance for the decline in values after 1929. Mr. Justice Roberts thus described the method of the lower court: "It found that book cost less actual accrued depreciation would probably give too high a figure. It sought to correct the probable error by deducting from cost the entire depreciation reserve, though conceding this exceeded actual depreciation. It felt that this large deduction would also redress any excess of cost over present value; and finally it said the result of its method would be appropriate to allow for going value." (*Ibid.*, 679.)

method, the dissenting Justice adduced evidence to support the reasonableness of the Commission's procedure: (i) the composite index number was said to be appropriate for adjusting for changes in the value of the dollar and in the costs of utility construction;⁹¹ (ii) the variation in the results obtained from the application of the individual indices was shown to be smaller than the variations in the valuations arrived at on the basis of engineering appraisals; (iii) the Commission had received and considered all of the evidence presented by the company, and it was indicated that the price indices introduced by the company were less reliable than those developed and used by the Commission; and (iv) it was recalled that the Court itself had referred with approval to the use of general price trends in estimating fair value.⁹²

*The Pacific Gas and Electric Company case.*⁹³ In 1938 Mr. Justice Hughes returned to the *Los Angeles* decision to uphold another rate order of the California Commission which was admittedly based upon historical-cost figures. The Commission had received evidence introduced by the company to show the replacement cost, but found it of no probative force because the estimates for 1933 were higher than the historical-cost figures, although the property had been largely constructed in the period of high prices following 1919. The lower court did not deal with the question of confiscation, but simply enjoined the Commission's order as invalid on the ground that the Commission had refused to consider the fair value of the property. The Chief Justice noted that the Commission's actions were consonant with the requirements of due process,⁹⁴ that historical cost was appropriate evidence of the fair value, and that the issue of confiscation was not before the Court; and finally, concluded by reversing the decree of the lower court.⁹⁵

6. TENTATIVE CONCLUSIONS RESPECTING PRESENT FAIR VALUE

THE PRESENT STATE OF THE "RULE." What general principles may be extracted from this survey of the elaborations and modifications of the present-fair-value rule from 1898 to the present? The most obvious characteristic of the decisions must be the fact that the Supreme Court itself is committed to nothing, that we may expect from the Court the same freedom in the future as in the past in propounding modifications. The Court has consistently re-

⁹¹ *Ibid.*, 685-686.

⁹² *Clark's Ferry Bridge Co. v. Pub. Serv. Comm.*, 291 U.S. 227, 236 (1934); *St. Louis & O'Fallon Ry. Co. v. U.S.*, 279 U.S. 461 (1929).

⁹³ *Railroad Comm. of Cal. v. Pacific Gas & E. Co.*, 302 U.S. 388 (1938). The majority was composed of Mr. Chief Justice Hughes and Justices Brandeis, Stone, Cardozo, and Roberts. Mr. Justice Black concurred in the order. Mr. Justice Sutherland did not participate in the decision. Mr. Justice McReynolds joined in Mr. Justice Butler's dissenting opinion.

⁹⁴ *Ibid.*, 393-394.

⁹⁵ The issue respecting the rate base and rate-making procedure was sharpened by the dissent of Mr. Justice Butler, who was of the opinion that the Commission's procedure could not be squared with the holdings of the Court:

"The principle applied in *Smyth v. Ames* has long governed wherever judicial action has been invoked to enforce the rule of just compensation. It is binding upon state courts and commissions. But the California commission refuses to follow the established rule. It does not ascertain or use present value but in its place takes historical cost, actual or estimated, as the basis of its determination in rate judging and rate making." (*Ibid.*, 404-405.)

fused to be bound by a definite formula, and has often reiterated that fair value rests on a "reasonable judgment having its basis in a proper consideration of all relevant facts." But both in the matter of what constitutes "proper consideration" and what facts are "relevant," the decisions have been notably lacking in precision.

Despite the uncertainties and ambiguities that have been displayed in the foregoing cases, there has been some degree of crystallization in the thought of the judiciary. Certain of the original ingredients of the recipe have been consistently omitted: the market value of the company's outstanding securities is never used to measure the propriety of existing or proposed rates; the par value of outstanding securities is accepted as having probative force only when such evidence is acceptable to a commission, presumably because the securities have been subject to regulation; and the probable earning capacity of the property under existing rates has been deleted from the rule. Courts and commissions have tended to place their reliance chiefly on two "measures of value": the original cost (actual or estimated) to the present time; and the present cost of replacing the property; but the Supreme Court has quite uniformly held that fair value is not necessarily identical with either the original cost to date, the present cost of reproduction new, or the present cost of reproduction less depreciation.

It is especially to be noted that the fair-value rule is concerned with protecting the value of the utility's property, not the value of the business as a going establishment (for presumably this latter value is derived from the earnings of the business), nor the investment in, or the cost of, the property. Yet the finding of the fair value is not confined to the value of the physical property, but may also embrace various intangible elements. Of course, the full value of the physical property of the utility is not protected under all circumstances, as, for example, when the property is no longer adapted to, or useful in, the public service. Changes in the general level of prices call for revisions in the valuation of the property, though the extent of the revisions and the methods by which the changes are to be given effect are not wholly free from obscurity. The property is valued in its present condition; and the same logic which supports the deduction of accrued depreciation from the reproduction-cost-new estimates also requires its deduction from the original-cost figures. With little or no consideration of economic merits, property in land has been accorded special treatment—the present value of land usually being measured by the market value of similar adjacent land rather than by either the original cost or the present replacement cost of the land. Though many fair-value determinations have involved a large measure of estimate, the Court has frequently ruled that purely hypothetical items or estimates are not permissible in such valuations. The one objective touchstone in the fair-value determination and the control of rates seems to be the ability of the utility to attract new capital; but, though it has often referred to the primacy of this test, the Court has hesitated to make this the foundation upon which to erect a regulatory program. Today, as in 1898, the essence of the rule is still to be found in the pronouncement: "What the company is entitled to ask is a fair return upon the value of that which it employs for the public con-

venience. On the other hand, what the public is entitled to demand is that no more be exacted from it for the use of a public highway than the services rendered by it are reasonably worth." All other elements of the rule have undergone modifications, and are likely to experience further changes in the years ahead.

CRITICAL APPRAISAL. A final critical appraisal of the present-fair-value rule cannot be formulated until the entire process of valuation and rate regulation has been reviewed. The present purpose, therefore, will be to consider the fair-value program in the light of the foregoing decisions of the Supreme Court rather than as it has been applied by the lower courts and the commissions.

A glance at the origins of the fair-value procedure may serve to clarify this present judgment. There is no doubt of the propriety of the *Smyth v. Ames* decision at the time that it was made, though even in 1898 it might have been apparent that there was confusion of thought and dangers for the future in the choice of the unfortunate "value" standard and in the prominence given to the fallacious condemnation analogy. The Court was clearly motivated by two considerations: the necessity of preserving to the state the power to protect the shippers from the exorbitant charges and discriminations of the railroads, and a desire to protect the legitimate interests of investors. With a due regard for these opposing interests, it could accept neither the contentions of the state of Nebraska nor those of the railroads. It committed itself no further than to say that the question of the confiscatory character of the rates should be determined in the light of all the relevant evidence.

The fair-value rule arose out of the confusions and uncertainties as to the legitimate rights of investors; neither the amount nor the propriety of the investment in the property of the carriers was capable of accurate determination. As regulation has developed with a control over the accounting practices and security issues of utility corporations, the contemporary source of confusion and uncertainty is no longer as to the protection of the legitimate rights of investors, but is rather in the obscurities and obstructions in the application of the fair-value rule itself. It may therefore be proper to raise the question whether the precedent of *Smyth v. Ames* should not now be formally superseded either through the enactment of appropriate legislation by the state and federal governments or through the abandonment of the precedent by the Court itself.

At the outset, consideration may be given to the possibility that the rule of *Smyth v. Ames* was never designed by the Court to serve as a binding rule or procedure for the administrative and legislative branches of the government. Five lines of evidence may be introduced to support the conclusion that, at least in the early years of judicial review of rates, the rule was never intended to limit the adoption of any reasonable procedure by either the legislature or its agent, the commission:

(1) The circumstances of its formulation strongly suggest that Mr. Justice Harlan had no intention of prescribing a procedure for the future guidance of regulatory commissions, and certainly no one has suggested that the procedure should be applied by the legislatures. All of the "elements of value" were proposed by one or the other of the parties as the basis upon which the

adequacy of the rates should be judged. If the case stood alone, it would be obvious that the rule was a typical reply by the Court to the conflicting arguments urged for its consideration, and in support of this interpretation it may be noted that in the decision the Court summarized the arguments of opposing counsel in the paragraphs just prior to that in which the rule was enunciated.

(2) A critical analysis of the rule itself affords convincing evidence that the Court was not intent on prescribing a procedure for the future control of utility rates by state authorities. Of the six factors which the opinion enumerated as "matters for consideration," not all are of equal significance in furnishing evidence as to the fair value of a utility's property, and others afford no evidence whatever as to value. Two factors, the original "cost of construction" plus "the amount expended in permanent improvements," and "the present as compared with the original cost of construction," in later application expanded to "reproduction cost new" and "reproduction cost less depreciation," have been widely employed as measures of present fair value. The other "matters for consideration" are all unsuitable as measures of fair value for rate regulation; they seem to have been included in the enumeration only because they appeared in the arguments of counsel. "The amount and market value of its bonds and stocks," whenever mentioned by the courts and commissions, have been mentioned only to be rejected.⁹⁶ The "amount" of bonds and stocks was presumably intended by the Court to designate the par value of the outstanding securities; the irrelevance of this factor when securities have been issued in excessive amounts was recognized in this, and other, decisions where utilities have claimed a right to earn upon capitalization. The "market value" of the bonds and stocks is similarly quite inappropriate as a measure of the rate base; the market value of any security depends largely upon the earnings applicable to that security, and hence would always tend to be such as to make existing earnings appear reasonable. No discussion is necessary to indicate that the remaining matters enumerated—the probable earning capacity under the prescribed rates and the operating expenses—have no significance in determining fair value, however important they may be in estimating the fair return likely to be realized. Finally, one who is formulating a definite rule does not, as Mr. Justice Harlan did, insert the *caveat*, "We do not say that there may not be other matters to be regarded in estimating the value of the property."

(3) Subsequent modifications of a major character in the rule constitute irrefutable evidence of the impracticability of the original formulation as a guide for either courts or commissions. The most conspicuous omission in the original rule was the failure to consider the condition of the property in its bearing upon value—an omission that was corrected after more than a decade when the deduction of accrued depreciation was required. The valuation of land on the basis of the market price of similar adjacent lands has been an-

⁹⁶ The notable exception to this statement would be those states that have followed the prudent-investment procedure, where the regulation of security issues and control of accounts give assurance that outstanding securities bear some known relation to the investment in utility property.

other major modification in the fair-value technique. And the attention which has been paid to the nonphysical elements of value is in striking contrast to the early applications of the rule to physical property. And certainly the concentration on original cost and reproduction cost to the almost complete neglect of the other "elements" constitutes a change so sweeping as to be nearly an abandonment of the original rule.

(4) The discussion in the following chapters may be somewhat anticipated by calling attention to the test of suitability as another line of evidence as to the impropriety of regarding *Smyth v. Ames* as the answer to the procedural problems which regulatory authorities encounter. The costly, time-consuming, litigious, and self-defeating attempts to apply the fair-value rule to the administrative determination of reasonable rates should be a warning that the tool was never designed for that operation. While the rule is possible of application to the judicial task of weighing the confiscatory character of rates established by legislative authorities, and while for judicial proceedings the very freedom from formal requirements and definite procedures may aid in fitting the decision to the particular case, the wisdom of abiding by present fair value has been frequently and seriously questioned even within the Court.⁹⁷

5) The final argument against the interpretation of *Smyth v. Ames* as imposing a procedure of rate regulation on state commissions is to be found in the impropriety of judicial interference within the sphere of legislative authority, an impropriety so clearly acknowledged in the *Los Angeles* decision. Courts have never possessed the power to dictate to the legislatures the methods or procedures by which legislation is enacted; no maximum-rate statute has ever been declared unconstitutional on the ground that the legislature failed to determine the value and prospective net income of companies operating subject to the statute. It would seem good law, as well as good logic, to recognize that the commissions enjoy the same freedom of choice as to method and procedure that would be enjoyed by the legislature in dealing with the same question, subject only to such limitations as the legislature may impose.

One of the most persistent sources of confused thinking relative to the principles of judicial review of rate regulation is to be found in the ubiquitous condemnation analogy.⁹⁸ The inapplicability of the principles of eminent domain to the valuation of property for purposes of rate control should be readily apparent. Where property is taken by eminent domain, the owner is entitled to receive just compensation measured by the value of the property at the time of the taking; the compensation should leave the owner as well off with the payment but without the property as he was with the property but without the payment. In such proceedings the value of the property appropriately depends upon the income derivable from the property; value is essentially market value. The inaptness of this principle in testing the legality of the regulation of rates arises from the fact that it is often the purpose of rate

⁹⁷ Mr. Justice Brandeis in his separate opinion in *Southwestern Bell Tel. Co. v. Comm.*, 262 U.S. 276, 296-298 (1923).

⁹⁸ See Mr. Justice Roberts, in *West v. Chesapeake & Potomac Tel. Co.*, 295 U.S. 662, 671 (1935).

regulation to effect a reduction in the income derived from the regulated property; that *any* reduction in the earnings must have an adverse effect upon the *value* of the property; and that an attempt to preserve the value of the property (in the sense in which value is used in condemnation proceedings) would forestall any and all reductions in rates, however excessive the existing charges might be.⁹⁹ The taking of property by eminent domain involves only the relations between the property owner and the state at the instant when the property is taken; it does not look back to the relations of the past nor forward to the mutually dependent and profitable business of the future which is characteristic of the relations between the utility and its public. A fundamental step in the development of logical principles governing the regulation of the rates and charges of businesses "affected with a public interest" must be the abandonment of the condemnation analogy.¹⁰⁰

A further source of confusion in the regulation of utility charges is implicit in the failure to distinguish the property of a utility corporation from that of other private businesses. The differences are more important than the likenesses. The typical regulated business is largely protected from competition, is relatively secure from the losses inherent in rapid and unforeseen changes in productive technique, and has a large measure of assurance as to the future demand for its product. Under such circumstances, there is little in common between an investment in the equity securities of utility enterprises and of industrial or commercial businesses. Instead of paying almost exclusive attention to the restrictive character of regulation, far more consideration should be given to the benefits which control confers upon the regulated enterprise. It is especially important to note that neither present value nor original investment is afforded any protection by the competitive conditions which constitute the environment in which unregulated enterprises operate. From these observations it may be deduced that the return requisite to attract capital into utility undertakings is not to be measured by the earnings of competitive business, and that to give utility enterprises the benefit of increases in the price level is to prefer the protected to the unprotected enterprise—that to give utilities the benefit of price increases is as unnecessary as it is impractical to impose upon them the losses from declining price levels.

Many logical inconsistencies are present in the formulation and application of the fair-value procedure. The limited validity of reproduction cost as a measure of value has been set forth, and the lack of harmony in the elements which constitute the typical reproduction-cost estimate will be developed subsequently.¹⁰¹ It has already been remarked that land values are normally derived from a standard which is not applied to other forms of property. Nor is the propriety of granting to the utility company *partial* recognition for

⁹⁹ Unless, of course, the reduction in charges resulted in such an increase in volume of business as to bring larger net earnings.

¹⁰⁰ For a full discussion of the Court's use of eminent domain principles as a criterion of utility rates, see Hale, "Conflicting Judicial Criteria of Utility Rates," 38 *Col. L. Rev.* 959-977 (June, 1938), and "The Fair Value Merry-Go-Round, 1898 to 1938," 33 *Ill. L. Rev.* 517-531 (Jan., 1939). Professor Hale has presented the ultimate fallacy of the use of eminent-domain principles in the regulation of utility rates with a clarity and acumen that is not to be found elsewhere in public utility literature.

¹⁰¹ Chapter XIII.

increases in value attributable to changes in the general price level beyond questioning; why not the full increment or none? But perhaps the most serious deficiency in critical perspective is to be found in the allowance for increases in the general price level in the determination of the rate base and the measurement of the rate of return by the rate of earnings which unregulated enterprises enjoy on their investments; to base charges on the higher rate base and also to adopt a higher rate of return is to make a double adjustment for the same rise in prices to the double disadvantage of consumers.

In turning to a consideration of valuation methods as applied to the determination of original-cost and reproduction-cost figures, two fundamental tests of the justice and expediency of any system of rate regulation should be kept in mind. Any program of control must be fair to those committed to the enterprise prior to the inauguration of the program or of the change in program. And looking to the future, regulation must be effective in securing and maintaining satisfactory service, especially in attracting new capital funds as required by the enterprise.

CHAPTER XII

ORIGINAL COST

I. THE NATURE OF ORIGINAL COST

DEFINITIONS OF COST. One burden shared by economics and law is the necessity of imposing a technical and precise meaning on words which already have wide currency. The confusions of thought and expression attendant upon the adoption of "value" to describe the rate base have been remarked. A further illustration of word difficulties is provided by the multiple meanings associated with "cost."

Three primary meanings attaching to original cost. Original cost is usually defined in one of three senses—as the book cost, the cost of the original units of property, or the cost of those units of property which are currently in use.

(1) The book cost is the total of the costs shown by the accounts. The validity of this figure depends upon the correctness of the system of accounts which the company uses. A meticulous preservation of the distinction between capital charges and other expenditures is essential. The asset accounts should record only those items which are proper charges to capital and should include all of such capital charges; and likewise, the asset accounts should reflect all capital retirements or reductions in the value of existing capital assets. As a definition of original cost, book cost would be acceptable only if the utility had kept its books according to a system of accounts prescribed by public authority, and if, moreover, the company's compliance with the prescribed system had been subject to thorough check through audits by the commission's accounting staff and through inspection of the physical property by its engineering staff. In the absence of such searching supervision, the accounts will almost certainly include items that cannot be accepted as part of the original cost for rate regulation.

(2) The cost of the original units of the property, the second meaning of original cost, may differ from the cost of the existing units of property. A good example of this is afforded by the accounting rules of the Interstate Commerce Commission, which, with respect to certain primary accounts, make no allowance for differences in cost between the thing replaced and the thing with which it is replaced. Thus, if ties originally cost 50 cents each, the accounts still record the investment as 50 cents even though the original ties have been replaced with ties costing \$1 each. If the cost of replacements is charged to operating expenses, the books continue to reflect the cost of the original unit to the company, any added costs for present units having been provided by the users of the service.

(3) The third, and much the most serviceable definition of original cost, runs in terms of the actual cost of the existing property of the company. All superseded property should be written out of the capital accounts at original cost (or at whatever figure appears in the accounts) and all replacements charged to the asset account at actual cost. Thus, to revert to the tie illustration

again: according to this definition, when the original ties are retired, the asset account should be reduced by 50 cents and when the new tie is installed the asset account should be increased by \$1. In the absence of any notation to the contrary, this third meaning will govern the use of "original cost" in this discussion of utility rate regulation.

COST TO WHOM? Does original cost signify the cost to the owners of the corporation, the security holders, or the cost to the corporation itself? No extended consideration is required to demonstrate the inappropriateness of the former concept. The various prices at which the present security holders have purchased their stocks and bonds would be incapable of ascertainment, and even if available, would have no significance in measuring the obligation which the users of the utility service have to either the utility or its security holders. Cost refers to the cost to the utility.

Much more serious is the question that arises when utility assets have been sold by one utility company to another. Is original cost the actual cost to the present utility corporation, or is it the cost to the original utility? This question has not always been answered uniformly, but the weight of authority favors the cost to the corporation that first devotes the property to the public service. This is the meaning that the Interstate Commerce Commission has consistently attached to the term.¹ And when the issue has been presented, most state commissions have returned the same answer.² Also, the uniform system of accounts adopted by the certain federal commissions defines original cost to mean "the actual money cost of (or the current money value of any consideration other than money exchanged for) property at the time when it was first dedicated to the public use, whether by the accounting company or by a predecessor public utility." And this requirement respecting telephone accounting has been upheld by the Supreme Court against the challenge of the American Telephone and Telegraph Company.³ The objections to defining original cost in terms of cost to the present owners rather than in terms of the cost to the original owners is obvious; a transfer of the property may be the occasion for including in the capital accounts such things as "write-ups" in the value of the property, discounts on securities, costs of financing, promoters' profits, and extravagant payments for the acquired property.

THE AMOUNT OF THE COST. In quantitative terms, the cost is to be measured by the actual money payment for the property in question. If the property has been purchased for a non-cash consideration, as securities, then it becomes necessary to express the consideration in its cash equivalent.⁴ Very often in the purchase of property, especially land, the formal consideration is nominal; to show original cost accurately, it is necessary to ascertain the real consideration paid. The determination of the actual cost is further compli-

¹ *New Orleans Great Northern R. Co.*, 133 I.C.C. 825, 826 (1927).

² *Potomac Elec. P. Co. v. Comm.*, P.U.R. 1920C, 326 (Sup. D.C., 1920); *Re Metropolitan West Side Elev. R. Co.*, P.U.R. 1921B, 229 (Ill., 1921); *Hansua v. Commonwealth Tel. Co.*, 1 P.U.R. (N.S.) 52 (Wis., 1933); *Re Upstate Teleph. Corp.*, 13 P.U.R. (N.S.) 134 (N.Y., 1936); *Pub. Utility Comm. v. Duquesne Light Co.*, 20 P.U.R. (N.S.) 1 (Pa., 1937).

³ *Am. Tel. & Tel. Co. v. U.S.*, 299 U.S. 232, 238 (1936).

⁴ *Re Alabama Power Co.*, P.U.R. 1932D, 345, 352-353 (F.P.C., 1932).

cated when, as so often happens in the acquisition of real estate, more property is acquired in a single transaction than is actually used in the public service.

It is possible for the actual cost to be in excess of the purchase price. For example, the cost to the utility should include not only the payment made for equipment that is purchased from a manufacturer, but also the cost of making the purchase and the cost of installing the equipment or otherwise preparing it for use. In the absence of accurate accounting practices, the costs of purchasing and installing may be charged directly to operating expenses, whereas they are more properly chargeable to capital account.

ORIGINAL COST DISTINGUISHED FROM RELATED TERMS. *Historical cost.* Original cost or actual cost is a fact to be ascertained from an inspection of a company's books or from other relevant sources of information. It sometimes happens, however, that it is impossible to ascertain this actual or original cost. Historical cost designates *an estimate* of what the original cost presumably was. The items listed in the inventory of the utility's property are valued according to the prices which prevailed at the respective dates when the various items of property were acquired. Historical cost is thus an estimate of a normal or average cost whereas original cost is a factual statement of the cost sustained by the particular company in acquiring its property.

Investment cost. Investment cost is a concept developed by the Interstate Commerce Commission in its valuation of the railroads. Since most railroads were constructed many years ago, the records of original cost are frequently no longer extant, and even when such records are in existence, the form in which the accounts were kept renders them of little validity as proof of the cost to the carrier or its predecessor. In these circumstances, the Commission refused to make a determination of original cost on the basis of estimates. Instead, it undertook to find the "investment cost" by recapitulating the financial history of the carrier in order to show the maximum sum that could have been expended in the creation of the property, actual cost figures being included in so far as such were available.⁵

Prudent investment. The book-cost-to-date may be said to record original cost from the standpoint of correct accounting; the actual-cost-of-existing property, from the engineer's standpoint of an appraisal based upon an inventory of the property; and prudent investment, from the standpoint of equitable treatment of investors and consumers. Prudent investment differs from original cost in that it imports an element of judgment, involving the elimination from the total of original cost of those expenditures which were improper, improvident, or unnecessary in the light of the conditions prevailing when the expenditures were made. Prudent investment, like the actual cost of existing property, requires the elimination of those items of cost which represent property no longer used and useful in serving the public.

ORIGINAL COST DEFINED. For the purposes of this study, original cost may now be formally defined as the actual money cost of (or the contemporary money equivalent of any consideration other than money given in payment

⁵ *Texas Midland R.*, 75 I.C.C. 1, 179-180 (1918).

for) the existing property at the time when the property was first applied to the public use. In explanation of this definition, attention may be called to the interpretation which the Federal Power Commission has placed on the expression "net investment cost" as used in the Federal Water Power Act: "The Commission interprets this . . . to mean that the cost must be (1) *actual*, that is, real and bona fide, as distinguished from fictitious or fabricated, whether by intercorporate dealings or otherwise; and (2) *legitimate*, meaning not coerced, collusive, fraudulent, or unreasonable; and (3) *original*, as excluding elements of subsequent enhancement, profit, or accretion."⁶

2. THE ASCERTAINMENT OF ORIGINAL COST

THE PROCEDURE. The procedure followed in the ascertainment of original cost will depend upon the definition of cost adopted, and upon the adequacy of the prescribed system of accounts and the commission's confidence in the accuracy of the company's books. The asset accounts will provide the point of departure, and if there is absolute assurance that the books correctly reflect the cost of the property as it is presently constituted, the original cost could theoretically be determined without further investigation.

For most utilities, however, it is impossible to discover the original cost from accounting records alone. This may be due to the fact that the original books and records are not in existence; they may have been destroyed, accidentally or otherwise; or they may not have passed to successor corporations at the time of mergers or consolidations.⁷ In many utilities' accounts, especially those referring to land, expenditures for used and useful property have not been separated from expenditures for property not used in the utility service. In some instances, the cost of property abandoned or retired has not been written out of the accounts. Or again, a utility may have given its securities as consideration for the acquisition of property and charged to its investment accounts the equivalent of the par value of the securities without respect to their actual market value.

The preparation of a complete and detailed inventory is a usual step in finding the original cost of a complex property. This may be unnecessary if the utility has kept, under commission supervision, a continuous inventory of its property. The purpose of the inventory is to verify the existence and usefulness in the public service of the property recorded in the asset accounts. In preparing the inventory, the first problem that arises concerns the units in which the property shall be reported; it is customary to select units which conform as closely as possible with the primary accounts of the company. Following the count of the units of property, it is necessary to enumerate, classifying according to type, the man-hours of labor involved in the acquisition and installation of the physical property. And finally, a determination

⁶ *Re Louisville Hydro-Electric Co.*, 1 P.U.R. (N.S.) 454, 463-464 (F.P.C., 1933).

⁷ This is especially true with respect to the valuation of the railroads by the Interstate Commerce Commission. The Commission illustrated this difficulty by noting that the Boston & Maine system, comprising less than 2,500 miles of line, had involved 167 corporations in the course of its development. (*Texas Midland R.*, 75 I.C.C. 1, 181 [1918].)

must be made of the time when each unit of the present property was installed (such data being also required for the purpose of calculating the depreciation of the property).

The third stage in the original-cost determination is the verification of the cost entries for each class or unit of property. Data are sought in the vouchers of the utility, in contracts, in the cash books and contracts for construction materials and installations (not only for the utility but for other firms that have undertaken construction work), in the time records and payrolls for labor, in the files of purchasing departments, in trade publications, in the catalogues and estimates of manufacturers, and in the records of courts and other governmental agencies. Indeed, the search proceeds wherever reliable information can be obtained as to what the utility actually paid for property purchased or constructed and what other businesses were paying for similar purchases at the time.

The final step in the determination of original cost is the calculation and deduction of accrued depreciation.⁸ Many commissions and courts have not habitually provided for any deduction from the original cost figures for accrued depreciation, especially in the earlier cases;⁹ but the present tendency seems to favor its deduction.¹⁰ No logical basis exists for distinguishing between original cost and reproduction cost with respect to accrued depreciation; the same considerations that underlie the deduction of accrued depreciation from the latter apply to its deduction from the former. The loss of value and the exhaustion of service capacity, which is the accruing of depreciation, operates as irresistibly against the original cost of the property as against any other measure of the value of the property. Furthermore, in the prescribed accounting systems, the annual depreciation charge and the accumulation of the reserve relate primarily to the original cost of the depreciable property. Of course, reasons may exist which will render inadvisable the deduction of accrued depreciation in arriving at the final rate base, but such considerations are irrelevant to the question of its deduction from original cost as a measure of that rate base.¹¹

ESTIMATES OF ORIGINAL COST. Wide differences of opinion have prevailed

⁸ The general considerations pertaining to the deduction for accrued depreciation are presented in Chapter XIII.

⁹ *Re Portland R. L. & P. Co.*, P.U.R. 1916D, 976 (Or., 1916); *Pine Lawn v. West St. Louis Water & L. Co.*, P.U.R. 1917B, 679 (Mo., 1916); *Verona v. Suburban Water Co.*, P.U.R. 1920F, 942 (Pa., 1920); *Re N.Y. State Ry.*, P.U.R. 1921C, 496 (N.Y., 1921); *Re Huntington Water Corp.*, P.U.R. 1922C, 636 (W.Va., 1922); *Re Monroe*, P.U.R. 1924C, 808 (Mich., 1924); *Re Imperial Utilities Corp.*, 31 Cal. R.C.R. 539 (1928); *Comm. v. Solar Elec. Co.*, 24 P.U.R. (N.S.) 337 (Pa., 1938).

¹⁰ *Re Charleston-Dunbar Nat. Gas Co.*, 1 W.Va. P.S.C. Decisions 831 (1921); *Re Southern Bell Tel. & Tel. Co.*, 7 P.U.R. (N.S.) 21 (N.C., 1934); *Re Jamaica Water Supply Co.*, 13 P.U.R. (N.S.) 405 (N.Y., 1936); *So. Bell Tel. & Tel. Co. v. Comm.*, 187 La. 137, 174 So. 180 (1937); *Southwestern Bell Tel. Co. v. State*, 181 Okla. 246, 71 P. (2d) 747 (1937); *Presque Isle Water Co. v. Itself*, 18 P.U.R. (N.S.) 385 (Me., 1937); *Comm. v. Edison L. & P. Co.*, 21 P.U.R. (N.S.) 328 (Pa., 1937); *Re Capital Transit Co.*, 25 P.U.R. (N.S.) 177 (D.C., 1938); *Fla. P. & L. Co. v. Miami* 98 F. (2d) 180 (C.C.A. 5th, 1938).

¹¹ The Interstate Commerce Commission consistently deducted accrued depreciation in its administration of the recapture clause. *Richmond, F. & P. R. Co. Excess Income*, 170 I.C.C. 451, 468-470 (1931). See also *Lum v. Great No. Ry. Co.*, 33 I.C.C. 541 (1915); *New York-Jersey City Ferry Rates*, 37 I.C.C. 103 (1915). It is interesting to note that the Valuation Act required the Commission to report on depreciation only with respect to reproduction cost.

among members of regulatory commissions as to whether original cost should be estimated when it cannot be ascertained as a fact from reliable records. This issue has been raised most acutely before the Interstate Commerce Commission, which was instructed in the Valuation Act to determine the original cost of the railroad properties. The Commission interpreted this instruction as requiring the ascertainment of a fact, and when original cost could not be reliably determined as a fact, the Commission refused to resort to estimates.¹² This position of the majority was criticized by some of the commissioners, who called attention to the statutory instruction to prepare such figures, to the need for accurate knowledge of what the railroads did, or should have, cost in arriving at the final fair value, and to the desirability of knowing to what extent railroad properties had been constructed by funds other than those supplied by the security holders.¹³ Though the estimate of original cost may be somewhat more difficult than that of reproduction cost as of valuation date, the process is fundamentally the same. Certainly the original-cost figures are of such importance in resolving conflicts of interest between utilities and their patrons, that the public should not be made to suffer from the deficiencies in the records of utility corporations.

The defects in the evidence as to original cost will be automatically corrected with the passage of time provided there is adequate supervision of accounts. The processes of retirements and replacements and of additions and betterments afford original-cost records for an increasing proportion of utility assets. It is significant that the Interstate Commerce Commission announced in its annual report for 1933 that original cost was then known for 70 per cent of the railroad property of the country.¹⁴

INCLUSIONS AND EXCLUSIONS. Two principles control the inclusion and exclusion of items from the original-cost determination. First, only those expenditures which constitute proper charges to capital are included. To include expenditures not chargeable to capital might result in the public paying twice for the same expenditure—paying the charge itself as an operating expense, and then paying a return on the same charge. Secondly, only those charges to capital account which represent property or expenditures currently used and useful in rendering the public service may be included in the original-cost figures.

The source from which were derived the funds expended in acquiring utility property is generally held to be of no significance in determining the legitimate original cost. If the property is used and useful in the public service, the cost belongs in the original-cost determinations whether the funds were provided through the sale of securities, the reinvestment of earnings, the investment of reserves or charges to operating expenses.¹⁵ To this general rule, some exceptions in the interests of justice and equity to consumers are

¹² It did, however, make use of estimates when the original cost of the major part of a carrier's property could be accurately determined, but it refused to utilize estimates for any major portion of the carrier properties. (*Texas Midland R.*, 75 I.C.C. 1, 177, 180 [1918].)

¹³ *Petition of National Conference on Valuation*, 84 I.C.C. 9, 14-22 (1923).

¹⁴ 47 Ann. Rep. I.C.C. 73 (1933).

¹⁵ *Re Portland R. L. & P. Co.*, P.U.R. 1916D, 976 (Or., 1916); *Bd. of Pub. Utility Commrs. v. N.Y. Tel. Co.*, 271 U.S. 23, 31-32 (1926).

required. The inclusion of property acquired through the reinvestment of earnings is often criticized, but fairness to utility investors demands that their sacrifice in foregoing dividends be recognized.¹⁶ A more difficult problem is presented by the claim that original cost should include items originally charged to operating expenses. Of course, an expenditure should not be included in the original cost if it would have been improper as a charge to capital accounts at the time it was incurred.¹⁷ A heavy burden of proof does, and should, rest on the corporation that would claim as a part of original cost the investment in any property charged originally to operating expenses, and the proof should include both the existence of the property on valuation date and, where the expenditure is for replacements, the fact that the superseded property has been written out of the accounts.¹⁸ But where the requirements of strict proof are met, the property should be included in the original-cost determination.¹⁹

The preceding discussion has made it clear that charges not represented by any addition to the physical property of the utility may be included in original cost. Overhead costs, such as interest during construction, legal and organization expenses, engineering and supervision, taxes, and insurance premiums or damage settlements, are usually a necessary and legitimate part of the expenses of establishing utility enterprises. On the other hand, discount on securities should be included only to the extent that it constituted an interest charge applicable to the construction period.²⁰

Many of the problems involving exclusions from original cost are concerned with property that is not used in the public service. Property may have been acquired for some non-utility purpose; and inasmuch as corporations keep only one set of books, such non-utility property may be recorded along with that used in the utility service. Such expenditures must, of course, be excluded from original cost. As another possibility, a charge to a capital account may represent an investment that covers both utility and non-utility property, as when a corporation finds it necessary to buy an entire tract of land though only a part is needed for the utility's operations. If the utility has subsequently disposed of the non-utility property, the total cost attributable to the entire property, reduced by the sum received from the sale of the non-utility property leaves the investment that should be included in original cost; but if the utility still holds the non-utility property and a segregation of expenses between the utility and non-utility portions proves impossible, the entire sum may be charged to capital.²¹

In all calculations of original cost some adjustment has to be made for re-

¹⁶ *Elgin, J. & E. Ry. Co.*, 84 I.C.C. 587, 593 (1924); but see *Advances in Rates, Western Case*, 20 I.C.C. 307, 341 (1911). This is discussed in Chapter XIII, Sec. 2.

¹⁷ *Texas Midland R.*, 75 I.C.C. 1, 43 (1918); *Elgin, J. & E. Ry. Co.*, 84 I.C.C. 587, 594 (1924).

¹⁸ *La Salle & B. C. R. Co.*, 141 I.C.C. 73 (1928); *Nashville, C. & St. L. Ry.*, 31 Val. Rep. 567 (1930); *Philadelphia & R. Ry. Co.*, 32 Val. Rep. 205 (1930); *St. Louis-S. F. Ry. Co.*, 41 Val. Rep. 139, 141, 146 (1932).

¹⁹ *Pullman Co.*, 36 Val. Rep. 845, 849 (1931).

²⁰ *Pittsburg & S. R. Co.*, 31 Val. Rep. 667 (1930); *Phila. & R. Ry. Co.*, 32 Val. Rep. 205 (1930); *Erie R. Co.*, 33 Val. Rep. 1, 7 (1930); *Chicago & A. R. Co.*, 40 Val. Rep. 1, 4 (1932).

²¹ *Texas Midland R.*, 75 I.C.C. 1, 165 (1918); *New York, P. & N. R. Co.*, 97 I.C.C. 273, 278 (1925); *Union Pac. R. Co.*, 44 Val. Rep. 1, 26 (1933).

placements which have been erroneously charged to capital account, and for capital accounts which still record property that has been superseded or abandoned. Since the original-cost determination is concerned only with property which is actually used and useful, all abandoned and superseded property should result in a credit to the appropriate capital account for whatever part of the cost of the asset still remains in the account. Where the books of the company do not accurately reflect retirements, deductions must be made for all such changes in the property.²²

Improvident and imprudent expenditures also call for modifications in the original-cost figures as shown by the company's books. Regulatory authorities have recognized that the public cannot be required to pay for mistakes, ill-conceived projects, and imprudent investments.²³ In general, new investments should add either to the earning capacity of the utility or should improve the quality of the service rendered.²⁴ This question arises frequently with respect to property constructed in advance of present needs, and normally commissions are inclined to permit the inclusion of such investments in original cost. But where the property is unwarrantedly in excess of present and prospective future requirements, that part of the investment should be excluded from the original-cost finding and the rate base.²⁵

The development of holding-company systems and the multiplication of intercorporate transactions has further complicated the determination of what capital charges may legitimately be included in the findings of original cost. Construction work, the purchase of equipment and supplies, and the flotation of securities all give rise to charges that find their way into capital accounts, and these operations have typically been handled by an affiliate when the utility is a member of a holding company system. Following the lead given by the Supreme Court in *Smith v. Illinois Bell Telephone Company*,²⁶ state and federal commissions have been increasingly critical of capital charges arising out of intercompany payments, insisting that such payments be limited to the actual cost to the affiliated company, and that they be not in excess of the payments that would be incurred in acquiring the same property from other sources.²⁷ The importance of these items may be realized when it is noted that in one instance the California Commission found that at least 55 per cent of the amount paid to an affiliate by an operating company and in-

²² *Meek v. Consumers Elec. L. & P. Co.*, P.U.R. 1915A, 956 (Mo. 1915); *Kansas City So. Ry. Co.*, 75 I.C.C. 223, 230 (1919); *Spokane, P. & S. Ry. Co.*, 41 Val. Rep. 1, 13-15 (1932); *Re Capital Transit Co.*, 25 P.U.R. (N.S.) 177 (D.C., 1938).

²³ *Atlanta, B. & A. R. Co.*, 75 I.C.C. 645, 668 (1923); *Dept. of Public Works v. People's Utility Co.*, P.U.R. 1924E, 724 (Wash., 1924).

²⁴ *Advances in Rates, Western Case*, 20 I.C.C. 307, 341 (1911); *Re Interstate Utilities Co.*, P.U.R. 1924A, 197 (Ida., 1923). But see *Fort Worth Gas Co. v. Fort Worth*, 35 F. (2d.) 743 (N.D. Tex., 1929).

²⁵ *Sullivan v. Mo. Elec. P. Co.* 6 P.U.R. (N.S.) 225, 244 (Mo., 1934). See also *Re Detroit United Ry.*, P.U.R. 1923E, 282 (Mich., 1923); *Colorado P. Co. v. Halderman*, 295 Fed. 178 (D. Colo., 1924).

²⁶ 282 U.S. 133 (1930).

²⁷ *Re Union Elec. L. & P. Co.*, P.U.R. 1924A, 74 (Mo., 1923); *Re Tennessee Eastern Elec. Co.*, P.U.R. 1926E, 378 (Tenn., 1926); *Re Louisville Hydro-Electric Co.*, 1 P.U.R. (N.S.) 454 (F.P.C., 1933); *Re Wisconsin Tel. Co.*, 6 P.U.R. (N.S.) 389 (Wis., 1934); *Comm. v. Empire Dist. Co.*, 10 P.U.R. (N.S.) 302 (Mo., 1935); *Re Long Island Lighting Co.*, 18 P.U.R. (N.S.) 65 (N.Y., 1935); *Re Northern States P. Co.*, 15 P.U.R. (N.S.) 126 (N.D., 1936).

cluded in the capital overheads should be deducted in order to eliminate inter-company profits and record the overheads on an actual-cost basis.²⁸ And a similar necessity for the elimination of unwarranted inflation in cost figures arises when mergers and acquisitions of utility assets take place at prices in excess of the costs to the predecessor company,²⁹ and when there have been write-ups in the asset accounts based on revaluations of the utility's property.³⁰

OBSTACLES AND PROBLEMS IN DETERMINATION. The obstacles and problems that are encountered in the determination of original cost depend in the first instance upon the definition of original cost which is adopted. If the recommended definition of original cost—the actual cost of the existing units of property—be accepted, the difficulties in its ascertainment are not likely to be insurmountable. Even where original cost cannot be determined from the books and supporting accounting data, it is usually possible to prepare reasonably accurate estimates for those parts of the property whose original cost is unknown from records of the prices of labor and materials current at the time the property was constructed.

The definition of original cost as the cost of the existing units of property does not eliminate all difficulties. It may still be impossible, even in the case of the better regulated companies, to ascertain original cost from accounting records alone. The question whether retirements have been accurately shown arises frequently. The utility's property cannot be disassembled into units to which definite ages can be assigned. A single purchase, as of real estate, may include both useful and non-useful property; or a contractor may have constructed a complex project for a single payment without ever preparing an itemized statement of the allocation of costs to the parts thereof. Again, purchases of operating properties or equipment from affiliated interests, and mergers and consolidations, may have introduced write-ups which make it difficult to discover what the asset or property actually cost when it was first devoted to the utility service.

3. JUDGMENT REGARDING ORIGINAL COST

The discussion has been concerned with original cost as a *measure* of the rate base upon which the right of the utility to earn a return should be judged, not as the rate base in itself.³¹ Any final appraisal of original cost must weigh the advantages and disadvantages inherent in the use of alternative methods of arriving at a satisfactory rate base. Thus, until the entire procedure of as-

²⁸ *San Diego v. San Diego Consol. Gas & E. Co.*, 7 P.U.R. (N.S.) 443, 458-462 (Cal., 1935).

²⁹ *Re Kansas City Elec. L. Co.*, P.U.R. 1917C, 728 (Mo., 1917); *Potomac Elec. P. Co. v. Comm.*, P.U.R. 1920C, 326 (Sup. D.C., 1920).

³⁰ *Commercial Club v. Pub. Utilities Co.*, P.U.R. 1915C, 1017 (Mo., 1915); *Re Bluefield Tel. Co.* P.U.R. 1926D, 209 (W.Va., 1926); *Re Mountain States P. Co.*, 3 P.U.R. (N.S.) 29 (Or., 1933); *East Hampton v. East Hampton Elec. L. Co.*, 8 P.U.R. (N.S.) 143 (N.Y., 1935); *Comm. v. Ozark Utilities Co.*, 18 P.U.R. (N.S.) 408 (Mo., 1937). For estimates of the extent of write-ups in utility assets due to the operations of holding companies, see Chapter IV.

³¹ This latter question relates to questions considered in the presentation of the prudent-investment program. (Chapter XVII.)

certaining fair value has been presented, the conclusions which follow must be held to be tentative only.

ADVANTAGES. The advantages of original cost as a measure of the rate base may be analyzed in relation to three criteria: administrative efficiency in regulation, financial stability for the enterprise and its investors, and the maintenance of equitable relations between the patrons and the company.

The relative ease with which administrative and regulatory authorities may determine original cost is a legitimate reason for the preference which commissions have shown for this measure of the rate base. Provided there has been adequate supervision of accounting, the commission's investigators can usually ascertain the original cost of the present property without great difficulty. The task of determining original cost may be further simplified by requiring the utility company to maintain a continuous inventory of its property, so that time and effort may not be required to make a detailed verification of the existence of the units whose costs are carried in the asset accounts. Revisions in original cost figures are required only infrequently (not, as with reproduction-cost estimates, whenever there is a change in the general level of prices), and when required, can be completed with only a check on net capital additions and retirements subsequent to the last determination. Since original cost is based upon findings of fact by the commission or its staff, rather than on estimates and forecasts, the commission has a relatively certain and stable basis for its decisions—an advantage which brings in its train an elimination of some of the grounds for litigation which flourishes when reproduction cost is the measure of the rate base. The occasions for the fantastic distortions in the rate base due to the changeable and subjective judgments of valuation experts, commissions, and courts, are also largely avoided.

Any circumstances which add to the financial stability of utilities will lower the cost of capital and reduce the expense of the service. Original cost is not subject to those wide fluctuations which are characteristic of reproduction-cost estimates. As long as utility enterprises are financed largely by securities whose earnings are fixed by contract (bonds and preferred stocks), any substantial decline in the rate base below the original-cost figure, may leave the utility unable to meet its fixed charges and may threaten it with bankruptcy. The majority of investors desire stable incomes, as witness their purchase of bonds and preferred stocks, and it is doubtful if even the common stockholders would welcome the wide fluctuations in earnings that would follow the complete abandonment of original cost as a guide to utility earnings.

Justice between patrons and investors is said to be assured by the use of original cost to determine the appropriate amount of utility earnings. Certainly, in the first instance, the original cost is the measure of the property devoted to the public service. Assuredly full justice is done to bondholders and preferred stockholders if earnings continue to cover their contractual interest and dividend payments; and so far as *that* part of the utility's capital is concerned, consumers should not be required to pay more. If justice to common stockholders requires a larger rate of return during a period of in-

flation, the granting of earnings sufficient to pay larger common dividends is not inconsistent with the use of original cost to measure the rate base.

DISADVANTAGES. Two major disadvantages are said to adhere to the use of original cost as a measure of the utility's right to earn an income, the most serious of which is that fixing prices according to past costs will result in distortion in the allocation of economic resources. This argument is derived by analogy from the conditions which are assumed to result from the free play of competition in the unregulated sector of industry. Under competitive conditions, price is said to be normal when equilibrium conditions prevail, that is, when there is no tendency for either the investment, or the withdrawal, of capital or labor. Under such conditions, price is said to possess two functions: in the short run, to move the present volume of production into consumption and to ration limited quantities among competing uses for the commodity; and in the long run, to guide the flow of capital and labor into the different fields of production so that the marginal productivity of capital and labor will be approximately the same in all employments. Applying this analogy to the pricing of the utility services, if prices fixed on the basis of past costs remain unchanged at a time when the general level of costs is rising, the "bargain prices" will cause a larger use of the utility service than would occur if consumers were required to pay the current real cost of production, and there will be an apparent need for further investments of capital; but the inadequacy of utility earnings will make it difficult for the industry to secure additional capital funds in competition with other investment opportunities. Conversely, if utility prices remain high in a period when costs of production in general are declining, the high prices will arbitrarily reduce the sale of utility service, even though consumers would gladly purchase more of the service at prices above the true economic costs; this suppression of the demand for the product will deter further investment of capital and labor in the industry to the prejudice of true efficiency, for further investments in the utility industry would yield larger increments of real social income than equivalent investments in other directions.³²

It must be admitted that theoretically this criticism of original cost is a serious one. Presumably regulation should not produce a distortion in the flow of investment funds and in the application of labor and other resources; resources should be so distributed among competing uses that no change in their allocation could produce an increase in the real income of the community. Nevertheless, two countervailing considerations may be presented as to the practical importance and validity of this criticism of original cost. (1) In practice, those who would utilize reproduction-cost figures instead of original cost to give effect to changing costs of production, tend to apply the alternate in such a way that utility prices are more responsive to changes in the general level of prices than to the actual changes in costs in the utility industry. (2) The adjustment of prices to changing conditions of costs in industries

³² See Dorety, "The Function of Reproduction Cost in Public Utility Valuation and Rate Making," 37 *Harv. L. Rev.* 173-200 (Dec., 1923); Brown, "Defects in Mr. Brandeis's Theory of Prudent Investment as a Rate Base," 12 *Calif. L. Rev.* 283-301 (May, 1924); Brown, "Railroad Valuation and Rate Regulation," 33 *J. Pol. Econ.* 505-530 (Oct., 1925); Brown, "Economic Basis and Limits of Public Utility Regulation," 53 *A.B.A. Rep.* 717-737 (July, 1928).

which are most nearly analogous to the public utilities seldom occurs with the smoothness and accuracy that the theory assumes. Industries with heavy fixed costs, such as characterize utility enterprises, are not those whose prices reflect sensitively the variations in production costs; indeed, they are likely to follow a quite rigid price policy, preferring to accept smaller volume of production to the uncertainties of substantial price reductions. And furthermore, it is in the industries with relatively heavy fixed investments that competition produces the greatest maladjustments in the allocation of capital and other resources.

The second major disadvantage is especially apparent in enterprises which are financially unsuccessful. Where radical declines in demand for the service occur, or where competing services develop, it may become utterly impossible for the utility to earn a return on its original cost with any schedule of charges. The fate of the street railways supplies a dramatic illustration of the decline that can come to a once thriving industry. Under such circumstances, all discussion of adjusting rates to a rate base is purely academic.

CONCLUSION. This brief presentation of the characteristics of original cost should reveal its relation to the regulation of utility rates and charges. The methods available for its determination and the problems peculiar to each have been canvassed. On grounds of administrative efficiency, economic expediency, and equity, original cost affords a satisfactory measure of the rate base. Some adjustments in the rate of return may be necessary if original cost is relied upon to fix the rate base when the general price level is fluctuating materially. Otherwise, the disadvantages in this measure do not assume serious proportions.

REPRODUCTION COST

I. THE REPRODUCTION-COST METHOD

INTRODUCTORY. The reproduction-cost method of valuation presents greater difficulties than are encountered in the determination of original cost—difficulties in part inherent in the complex character of reproduction-cost estimates and in part traceable to the divergent assumptions and procedures that characterize the valuation work of different courts and commissions. As a first approximation, reproduction cost may be defined as the estimated cost of reproducing or reconstructing a particular property or enterprise. Reproduction-cost estimates are of two types: the cost of reproduction new, based on the assumption that the property is in new condition; and the cost of reproduction less depreciation, based on the assumption that the property is in its present depreciated condition.

The estimate of reproduction cost begins with the assumption that the property to be valued is not in existence. A practical and economical program for the construction of the property is prepared; the items constituting the physical property are inventoried; unit prices are calculated for each class of property. Special investigations are undertaken to develop the present price of land holdings. Separate allowances are made for expenditures of an overhead and intangible character that have not been included in the valuation of the physical property. And finally, in determining the cost of reproduction less depreciation, the age and condition of the depreciable property is noted and the amount of accrued depreciation is calculated and deducted from the cost of reproduction new.

THE ASSUMPTIONS. The final estimate secured by the reproduction-cost method depends largely upon the assumptions on which the valuation is made. Is reproduction cost concerned with the cost of reconstructing the present plant as it exists at the valuation date or the cost of constructing a substitute plant such as would now be constructed to perform the same functions? Is the cost to be calculated on the assumption that present or original physical conditions prevail? And is the reconstruction to be done by historical or by present methods of construction? Is it assumed that the property is to be rebuilt as a single undertaking or piecemeal, additions being made to the property as its output enlarges?

Reproduction of an identical, or a substitute, plant? With all products capable of being freely reproduced, commercial or market value is limited by the present cost of replacement, replacement not in kind but in equivalent capacity for performing its proper function. No existing utility property would be reproduced precisely as it exists on valuation date. All complex properties that have grown through the years will exhibit many examples of lack of perfect adaptation to contemporary conditions of technology, market demand, and territory served. New methods of construction have rendered old

properties obsolete. An expanding demand for electric service has left many generating stations with several units of small capacity where today a new plant serving the same market would install a small number of large generators. A growth in the territory served, could it have been anticipated, would in many cities have led to a different location of the utility plant. Should all of these factors be considered by determining the replacement cost of an equally efficient substitute plant, such as would be built under contemporary conditions, or should the existing plant be valued?

Those who favor the reproduction cost of an equally efficient substitute rather than the cost of reproducing the existing plant, point out that the former conforms more closely to commercial market value. It is argued that the public is primarily concerned with service, not with the instruments by which that service is rendered; that under competitive conditions, the service would be available at a price reflecting the cost of the most modern methods of supplying it; and that the public should not be required to pay more than the costs of supply from an equally efficient modern plant. These considerations have not prevailed.

There are certain objections to strict adherence to the replacement cost of the existing plant as the standard for valuation. The public should not be saddled with higher costs because the existing plant is obsolete or poorly adapted to its function; appropriate deductions for accrued depreciation should be made. Also, the existing plant, if it has been constructed in piecemeal fashion to meet an expanding demand for the utility service, probably represents a larger investment than would now be requisite to perform the same service. Furthermore, technical difficulties in making the reproduction-cost estimate are encountered when significant parts of the plant are no longer in current production; to replace each of these outmoded parts would be more expensive than to construct a modern plant.

The acceptance of the existing plant rather than an equally efficient substitute plant as the standard for the determination of reproduction cost is urged on grounds of equity to the company and of practicability in the valuation work. Since the company's obligation to serve has been a continuing one in the past, the company should be credited with what it has done in good faith and in conformance with reasonable judgment. Also, it is all too apparent that the standard of an equally efficient substitute plant would raise difficulties, opening the doors to speculation and uncertainty as to the nature of the substitute plant, with unending and futile confusion in the determination of the reproduction cost.

The Supreme Court has been quite emphatic in holding that reproduction cost is concerned with the reproduction of the identical property, not with the reproduction of the service.¹ Most of the lower courts and regulatory commissions have long conformed to the standards of the existing property as the general guiding principle for the determination of reproduction cost. The standard of the identical plant has not been followed slavishly—the objective has been the cost of reproduction of the company's property by the use of materials and methods substantially, not exactly, similar to the property

¹ *McCardle v. Indianapolis Water Co.*, 272 U.S. 400, 417-418 (1926).

being valued.² Thus, commissions and courts have not hesitated to base reproduction cost on the cost of a substantially similar substitute when the identical equipment or material is no longer manufactured or available in the market.³

Present or original conditions? Whether reproduction cost should be determined on the assumption that historical or present conditions as to terrain and sources of supply prevail has not been authoritatively decided. With the exception of the Interstate Commerce Commission, this question does not appear to have been thoroughly explored by the regulatory authorities.

A strict adherence to the logic of reproduction cost would dictate the acceptance of present conditions. This is the interpretation of reproduction cost adopted by the Interstate Commerce Commission in its valuation work,⁴ and by a substantial number of the commissions that have given attention to this question.⁵ The assumption of present conditions would presumably include the adoption of present sources of supply for materials even though the materials were not precisely of the kind used in the original construction.

The adoption of original conditions would encounter serious difficulties. It would obviously involve a distortion of reproduction cost, for certainly no property being built in the present can take advantage of conditions that prevailed in the past. Double counting would be involved in valuing land according to the present value of similar adjacent lands, and at the same time allowing the historical cost of clearing forests, filling swamps, and otherwise reducing the land to cultivation. There is the further difficulty of accurately determining conditions at the time of the original construction. Despite these difficulties in theory and application, a few reproduction-cost determinations based on original conditions have been made.⁶

The adoption of present conditions may, under certain conditions, appear to work to the disadvantage of the utility; for example, the disallowance of expenditures involved in the relocation of highways or crossings,⁷ the exclusion of expenses for the relocation of buildings,⁸ and the rejection of expenditures for property no longer in use.⁹ In so far as the investment or sacrifice by the company is considered a fair standard for the regulation of charges, the adoption of reproduction cost under present conditions will be thought

² *Consol. Water Co. v. Maltbie*, 275 N.Y. 357, 9 N.E. (2d) 961 (1937).

³ *Texas Midland R.*, 75 I.C.C. 1, 41, 118, 177 (1918).

In one instance where reproduction in kind was impractical, a commission trended the original cost to conform to the present level of prices. (*Re Capital Transit Co.*, 25 P.U.R. [N.S.] 177 [D.C., 1938].)

⁴ *Texas Midland R.*, 75 I.C.C. 1, 14-16, 115-118 (1918); *Atlanta, B. & A. R. Co.*, 75 I.C.C. 645, 651 (1923).

⁵ *Knoxville v. South Pittsburgh Water Co.*, P.U.R. 1928B, 204 (Pa., 1927); *Douglas v. Arizona Edison Co.*, 1 P.U.R. (N.S.) 493 (Ariz., 1933); *Scranton-Spring Brook Water Service Co. v. Comm.*, 119 Pa. Super. Ct. 117, 181 Atl. 77 (1935); *Pacific Tel. & Tel. Co. v. Thomas*, 13 P.U.R. (N.S.) 337 (Or. C.C., 1936); *Re Capital Transit Co.*, 25 P.U.R. (N.S.) 177 (D.C., 1938).

⁶ *Peck v. Indianapolis L. & H. Co.*, P.U.R. 1916B, 445 (Ind., 1915); *Milwaukee Elec. R. & L. Co. v. Milwaukee*, P.U.R. 1918E, 1 (Wis., 1918).

If the purpose of the reproduction-cost estimate is to provide a check for the original cost of, or investment in, the utility, then the assumption of original conditions is logical.

⁷ *Texas Midland R.*, 75 I.C.C. 1, 116 (1918).

⁸ *Cumberland & M. R. Co.*, 116 I.C.C. 407 (1926).

⁹ *San Pedro, Los Angeles & Salt Lake R. Co.*, 75 I.C.C. 463, 480 (1923).

to work relative injustices among utility companies, for different companies may have experienced wide variations in their investment costs without any corresponding differences in the replacement costs under present conditions.

Much attention has been devoted to the possible injustices to consumers that may result from a strict application of the reproduction-cost technique under present conditions. For example, carriers and other utilities have claimed as part of their reproduction cost the estimated expense of removing hypothetical buildings that would presumably be found on the sites used by the utility.¹⁰ Claims may also be based on increased costs due to a multiplication of subsurface structures,¹¹ the cutting and replacing of street pavements laid subsequently to the placing of the utility's subsurface structures,¹² and theoretical overhead costs. So impressed have many students of valuation been by the dangers to the consuming public or to the utilities in the adoption of present conditions that they have been prepared to risk the certain difficulties inherent in the acceptance of historic conditions as the guide to the preparation of the reproduction-cost estimate.¹³

It must be recognized that an undeviating adherence to either historic or present conditions in the preparation of the cost-of-production estimate may work serious injustice to either the investors or the consumers. The balance of advantage appears to be inclined to the acceptance of present conditions as the guiding principle. However, where considerations of justice and equity to either patrons or utility require it, departures from strict compliance with the assumption of present-day conditions are in order.

Original or current methods of construction? There is no doubt that most utility structures could be replaced by the use of less costly construction methods than were employed when they were built. The requirement that the reproduction program be prudent and economical carries with it the acceptance of modern methods of construction as the standard for measuring the cost of reproduction.¹⁴

Piecemeal construction? For purposes of the reproduction-cost determination, should it be assumed that the property would be constructed in piecemeal fashion or that it would be built as part of a single co-ordinated construction project? Historically, most utility properties were constructed in piecemeal fashion, additions being made as the demand increased or the service area broadened. Piecemeal construction is always more expensive than "single-impulse construction"; hence, to the extent that unit prices for materials and labor are prepared on the basis of actual costs to the company, they will exaggerate the present reproduction cost. The reproduction-cost deter-

¹⁰ The Interstate Commerce Commission has rejected such claims in its valuations of the railroads, *Texas Midland R.*, 75 I.C.C. 1, 116-117 (1918).

It was exaggerated claims for similar allowances that caused Mr. Justice Hughes in *The Minnesota Rate Cases*, 230 U.S. 352, 452, 455 (1913) to reject the application of the cost-of-reproduction method to the valuation of lands.

¹¹ *Columbus G. & F. Co. v. Columbus*, 17 F. (2d) 630, 637-638 (S.D. Ohio, 1927).

¹² These claims are almost universally rejected on the authority of the Supreme Court's decision in *Des Moines Gas Co. v. Des Moines*, 238 U.S. 153, 171-172 (1915).

¹³ Maltbie, *Public Utility Valuation*, pp. 32-33; Spurr, *Guiding Principles of Public Service Regulation*, I, 330-331; Whitten-Wilcox, *Valuation of Public Service Corporations*, I, 688.

¹⁴ *Kansas City So. Ry. Co.*, 75 I.C.C. 223, 244 (1919).

mination seeks the replacement of the property as it exists on valuation date; piecemeal methods and costs are, therefore, unacceptable. This is the position that has been taken by most of the commissions that have passed on the matter.¹⁵

The property new or in its present condition? All utility properties that have existed for any time have experienced a cumulative decline in value due to wear and tear, obsolescence, inadequacy, and the changing requirements of public authorities. Depreciation is the diminution in value of property due to the lessening of its service-life from any, or all, of these causes. Since the object of the valuation is the determination of the fair value of the *present* property, it becomes necessary to determine not only the cost of reproduction new, but also the cost of reproduction less depreciation.

REPRODUCTION COST DEFINED. On the basis of this consideration of the alternate assumptions according to which the reproduction-cost estimate may be prepared, it appears that—reproduction cost is concerned with the reconstruction of an identical or substantially similar plant, as a single integrated undertaking, under present conditions and with the use of modern methods. Since the reproduction cost of the property in its present condition is sought, the reproduction cost new must be diminished by the amount of the depreciation in the property to secure the cost of reproduction less depreciation.

VALUATION PROCEDURE. *The general character of utility valuations.* The term "valuation" is used to identify the pecuniary sum at which a property is appraised and also to describe the process by which that sum is determined; that is, valuation refers both to the process and the result of that process.¹⁶

Valuations by regulatory commissions. There are marked differences in the thoroughness with which commissions prepare valuations. The most accurate and painstaking work has been done by the federal commissions, the Interstate Commerce Commission being the pioneer in the field.¹⁷ In some instances, state commissions have employed staffs of expert engineers, accountants, and attorneys; in other cases, the commissions have made their "valuations" largely on the basis of testimony introduced by valuation experts employed by the company or by other parties to rate proceedings.

Judicial valuations. When a valuation is appealed to the courts, there may

¹⁵ Interstate Commerce Commission—*Texas Midland R.*, 75 I.C.C. 1, 115 (1918); California—*Fresno v. San Joaquin L. & P. Co.*, 19 P.U.R. (N.S.) 73 (1936); Missouri—*Re Missouri S. R. Co.*, P.U.R. 1916C, 607 (1915); New Jersey—*Re N. Y. Tel. Co.*, P.U.R. 1925C, 767 (1924); New York—*Re Brooklyn Borough Gas Co.*, 21 P.U.R. (N.S.) 353 (1937); Oklahoma—*Re Southwestern Bell Tel. Co.*, 9 P.U.R. (N.S.) 113 (1935); Oregon—*Re Pacific Tel. & Tel. Co.*, 8 P.U.R. (N.S.) 61 (1934); Texas—*Lone Star Gas Co. v. Fort Worth*, 20 P.U.R. (N.S.) 89 (1937); Virginia—*Re Chesapeake & P. Tel. Co.*, P.U.R. 1926E, 481 (1926); Washington—*Dept. of Public Service v. Pacific P. & L. Co.*, 13 P.U.R. (N.S.) 187 (1936); Wisconsin—*Re Wisconsin Tel. Co.*, 13 P.U.R. (N.S.) 224 (1936).

¹⁶ The testing of whether rates prescribed by regulatory authorities are nonconfiscatory, as well as the establishment of reasonable rates in the first instance, requires resort to the valuation procedure. Although the principles governing the findings of the fair value or the rate base are substantially the same whether they are prepared for a judicial or an administrative tribunal, there are certain aspects in which the procedures of courts and commissions differ. These differences will be noted in passing.

¹⁷ For a detailed description of the valuation methods of the Interstate Commerce Commission, see *Texas Midland R.*, 75 I.C.C. 1, 168-186 (1918). This material is also available in Barnes, *Cases on Public Utility Regulation*, Chapter IX.

be either a certification of the record before the commission so that the court's decision may be based upon the commission's findings of fact or there may be a trial *de novo*. If there is a new trial, the actual valuation is ordinarily not the work of the court. Instead, the court will normally appoint a special master to take testimony and sift conflicting evidence. The master then prepares his findings and recommendations which are thereupon submitted to the parties to the case; the master's report, together with the exceptions and the briefs of the contending parties, is then submitted to the court and an opportunity is presented for oral argument before the court. On the basis of these reports and arguments, the court is prepared to make its findings of value. Though the case may be appealed from the lower to higher courts, the work of valuation will not be repeated; if defects are discovered in the valuation of the lower court, the higher court may simply modify the decree of the lower court or the matter may be returned to the lower court for further proceedings in harmony with the rulings of the higher court.

2. PHYSICAL PROPERTY OTHER THAN LAND

The valuation of the physical property other than land presents certain distinct problems. The appraisal involves four operations: an inventory of the property, the determination of the condition of each class or unit of property, the preparation of unit costs for each category of property, and the application of the appropriate unit prices to the inventory quantities to obtain the final appraisal figures.

THE INVENTORY. *Its preparation.* If the valuation is to be done thoroughly and carefully, the inventory should be prepared by the commission's staff, or perhaps jointly by the commission and the utility. The procedural details in the preparation of the inventory depend upon the character of the property and the state of the records pertaining to it. If the records of the company—not simply accounting records, but construction plans, specifications, engineering reports, vouchers, deeds, et cetera—are complete and accurate, it may be possible to prepare the inventory from the records, making field surveys only to verify the sufficiency of the records. On the other hand, if the records are incomplete or of doubtful accuracy, the inventory must rest on field studies. Even the most painstaking field studies will not suffice to produce a complete inventory of the property; in any complex property, there will always be elements of cost attaching to the physical property that will not be revealed by inspection alone, even for those physical properties that are capable of being fully measured and described. Therefore the field surveys must always be supplemented by a detailed study of all available records (those of contractors and others connected with the property as well as those of the corporation itself) in order to eliminate errors in the field studies, to identify invisible items (such as underground construction and temporary structures), and to obtain information as to inaccessible elements of the property.¹⁸

¹⁸ For a description of the method pursued by the Interstate Commerce Commission which illustrates the thoroughness with which the work should be done, see *Texas Midland R.*, 75 I.C.C. 1, 110-111 (1918).

If it lacks the time or the staff requisite for the thorough and detailed inventory such as has just been described, a commission may rely upon a so-called "yardstick appraisal."¹⁹ This procedure involves the careful appraisal of a limited part of the utility's property for the purpose of testing the reliability of the utility's valuation. If the company's appraisal does not agree with that of the commission, it is assumed that the same margin of error is to be found in the entire company appraisal, and a correction is made by a percentage adjustment. Although this procedure does not afford the same protection to the public that is secured by the more detailed inventories and appraisals, the "yardstick" procedure has its advantages—significant savings in time and expense, and eliminating controversies over matters of detail.

"Spot checking" is another short-cut to an appraisal of a utility's property. The commission may start with the inventory and appraisal prepared by the company or some other party to a rate proceeding, and cause its own staff to verify details selected at random. If the "spot checking" reveals errors, they cannot normally be compensated for by any overall adjustment such as is used in the "yardstick-appraisal" method; indeed, if the errors are sufficiently serious, it may be necessary for the commission to proceed with its own valuation of the property.

The form of the inventory. To be satisfactory, the inventory must be a carefully classified and fully itemized list of all the physical property of the utility company. Since most utility properties are extremely complex aggregations of structural items and equipment, it is important, both for economy in preparation and practicability in use, that the form of the inventory be carefully considered before the actual listing of the property begins. In general, the inventory will follow the form of the prescribed system of accounts, and within the accounting classification the enumeration will presumably use the conventional units employed in contracts and commercial transactions. The description of each unit of property must be so full and complete, through classification, measurement, or other description, that no questions will arise as to its identity or the appropriateness of the unit prices finally applied to it.

The substance of the inventory. What specific properties of the utility should be inventoried and included in the rate base, and what property should be excluded in the finding of fair value? In so far as it has spoken, authority, in the voice of the Supreme Court, has been concerned with generalized and affirmative statements that the utility should have "a fair return upon the reasonable value of the property at the time it is being used for the public";²⁰ that is, the inventory should include all property which is actually and necessarily used and useful in the rendition of its public service.

Every utility will own or use many items of property whose status for valuation purposes is somewhat ambiguous. The discussion of the substance of the inventory may consider specifically the status of seven categories of utility property:

¹⁹ *Southwestern Bell Tel. Co. v. Comm.*, 262 U.S. 276, 282-287 (1923).

²⁰ Mr. Chief Justice Hughes in *Los Angeles G. & E. Co. v. Comm.*, 289 U.S. 287, 305 (1933), quoting from *San Diego Land & Town Co. v. National City*, 174 U.S. 739, 757 (1899). Many other expressions of similar import have been used by the Court.

(1) The status of *property acquired through the reinvestment of earnings* may depend upon whether those earnings were excessive or only fair. According to the theory of regulation, the utility is permitted to earn only a fair return upon its property or investment. If the utility, while receiving only a fair return, chooses to withhold some of its earnings for investment in additions to its property, the property so acquired may be regarded as having been purchased with funds belonging to the stockholders. But if the utility enjoys surplus earnings, so that in addition to paying a fair return to its security holders, it is in a position to make capital investments out of earnings, a more delicate question is present as to the equitable treatment of such property. It might seem fair to regard property so acquired as held in trust for consumers. But in reality the answer is not so simple. The utility with surplus earnings was under no compulsion to reinvest any part of them; all earnings could have been distributed in the form of dividends (though if excessive dividends had been paid there would probably have been a demand for reductions in rates); and capital additions could have been financed through the sale of additional securities. To exclude from the rate base property which has been acquired in the past through the reinvestment of earnings, however excessive, will only penalize the conservatively managed utilities.

For the future, however, the equitable rule should prevail. Utility companies should not be permitted earnings above a fair return if such surplus earnings are not to be impressed with a public trust so that they may be used neither to pay excessive dividends nor to enhance the rate base upon which the consumers are later required to pay a return.

The legal status of property acquired through the reinvestment of earnings has already been discussed.²¹ Rate regulation may not operate retroactively. The Supreme Court has held that property used by the utility is entitled to earn a return even though acquired with funds paid in by consumers in excess of the costs of the service.²²

(2) *Property used in the utility service but acquired without cost* to the company may have been donated by some governmental unit, supplied by patrons, paid for with customers' deposits, or purchased with funds accumulated for depreciation, or for other, reserves.

The fair and equitable disposition of this question would appear to be the exclusion of donated property from the inventory. Obviously such property was not given for the purpose of enabling the corporation to exact higher charges; the intent was rather to enable the company to keep its investment at a minimum and so to enjoy a reasonable return on its investment with smaller earnings. Clearly, in establishing the rate base, franchises and any analogous rights in public property must be excluded from consideration except to the extent that the utility has incurred a cost in obtaining such rights from a governmental unit.²³

²¹ Chapter XI.

²² *Bd. of Pub. Utility Commrs. v. N. Y. Tel. Co.*, 271 U.S. 23, 31-32 (1926).

²³ *Willcox v. Consolidated Gas Co.*, 212 U.S. 19, 44-48 (1909); *Georgia Ry. & P. Co. v. Comm.*, 262 U.S. 625, 632 (1923).

Where property has been supplied by patrons or where funds have been paid to secure the extension of service to consumers who would not otherwise have been served, the same equitable rule should prevail. Though the title to such property is usually in the utility, a majority of the commissions ruling on the matter have held that customers' contributions should be deducted from the rate base, unless the utility is paying interest on such contributions and is under obligation to refund the payments to the customers at some future date.²⁴

It is sometimes said that property has been acquired without cost to the corporation when it has been purchased with funds accumulated for depreciation or other reserves. The treatment of such property raises more involved questions than have been presented by other instances of the acquisition of property without cost to the utility. In theory, it would seem proper that, where reserves have been accumulated by charges to operating expenses, the reserves so accumulated, or the property acquired with the investment of such funds, should not result in an addition to the rate base.²⁵

In justice to utility corporations, the rule suggested with respect to property acquired without cost to the company should work both ways. In many instances, public service corporations are under the necessity of spending substantial funds without acquiring any property in return: the removal of grade crossings, the substitution of underground for overhead wires, and other expenditures of a similar character are sometimes held to be of no moment in the determination of the rate base. If it is fair to disregard legal ownership where the utility is using property that has been provided through funds of patrons, it is just and reasonable to permit the utility to claim a right to a return upon any such expenditures as the corporation has been required to make.

(3) Every sizeable business finds that it is employing *property which it does not own*. For such property, either of two alternatives may be followed: it

²⁴ *Re Southern California Edison Co.*, P.U.R. 1924C, 40, 46 (Cal., 1923); *Gernert v. Myerstown Water Co.*, P.U.R. 1925B, 290, 293-294 (Pa., 1924); *Public Utilities Comm. v. East Providence Water Co.*, 48 R.I. 376, 136 Atl. 447 (1927); *Re Elizabethtown Water Co.*, P.U.R. 1927E, 39, 45 (N.J., 1927); *Re Wisconsin Public Utility Co.*, P.U.R. 1930A, 119 (Wis., 1929); *Re Northern Power Co.*, P.U.R. 1933C, 128, 131 (Mich., 1932); *Re Brooklyn Borough Gas Co.*, 21 P.U.R. (N.S.) 353, 413-414 (N.Y., 1937). *Contra: Re Sullivan County Water Co.*, P.U.R. 1922B, 715, 727 (Ind., 1921); *New Rochelle Water Co. v. Maltbie*, 248 App. Div. 66, 289 N.Y. Supp. 388 (1936).

²⁵ This position was taken by the Supreme Court in the *Cumberland Telephone* case:

"... It was obligatory upon the complainant to show that no part of the money raised to pay for depreciation was added to capital, upon which a return was to be made to stockholders in the way of dividends for the future. . . . It certainly was not proper for the complainant to take the money, or any portion of it, which it received as a result of the rates under which it was operating, and so to use it, or any part of it, as to permit the company to add it to its capital account, upon which it was paying dividends to shareholders. . . . That it was right to raise more money to pay for depreciation than was actually disbursed for the particular year there can be no doubt, for a reserve is necessary in any business of this kind, and so it might accumulate, but to raise more than money enough for the purpose and place the balance to the credit of capital upon which to pay dividends, cannot be proper treatment." (*Lat. Railroad Comm. v. Cumberland Tel. & Tel. Co.*, 212 U.S. 414, 424-425 [1909].)

This case did not involve the question of the investment of surplus earnings remaining after provision for depreciation funds. *Board of Public Utility Commissioners v. New York Telephone Co.*, 271 U.S. 23 (1926), was concerned with surplus earnings and should be distinguished from the earlier case which, the Court stated, it did not reverse.

may be included in the rate base; or, if it be excluded from the inventory and the rate base, the annual rental or other payment for its use may be included as an operating expense. The latter method will deprive the utility of the benefit of unusually favorable leases, and at the same time it will expose the public to any excessive costs that may arise from imprudently negotiated leases or from contracts between affiliated interests. However, the important thing is to avoid double charging that would result from the inclusion of the property itself in the rate base while permitting the annual rental to be charged as an operating expense.²⁶

(4) Puzzling problems are sometimes presented by *property* which the utility has *acquired in anticipation of future requirements*. While it is desirable to encourage utility managements to be foresighted in anticipating the requirements of future service and in acquiring the necessary property at a saving in costs where possible, it is unwise to require the consuming public to underwrite any and all such anticipatory investments, guaranteeing the utility against all mistakes. Three alternatives may be suggested: (i) the property may be included in the rate base from the time of its acquisition; (ii) the property may be excluded from the rate base until it is actually employed in the public service, at which time it may enter the rate base at its original cost plus the costs of carrying the investment to the date of employment; or (iii) the property may be excluded from the rate base until it is actually employed in the public service, and then it may be included at its fair market value as of the date of use. These three methods are not mutually exclusive—one method may be followed for some, and another for other, properties. The Interstate Commerce Commission has followed the practice of including such property if the public use is “imminent.”²⁷

(5) What treatment shall be accorded *property abandoned or discarded* after once having been used in the public service? Abandoned and superseded property, when it has no further value in the utility service, should be written out of the capital accounts and excluded from any enumeration of the property entering into the rate base. Certainly, if the question is one of confiscation, the general rule against the inclusion of such property will be strictly applied.²⁸ But when the question comes before a commission, undeviating adherence to the general principle is neither possible nor desirable. Assuredly, the burden of proof on the utility to sustain the inclusion of abandoned property should be a heavy one, but there are circumstances where the utility may legitimately expect to be permitted to amortize the undepreciated balance of property prematurely abandoned;²⁹ presumably such would

²⁶ It may be noted that the Interstate Commerce Commission has followed the practice of including such property in the inventory of the carrier using the property. (*Texas Midland R.*, 75 I.C.C. 1, 20 [1918].)

²⁷ The rule was stated with respect to land:

“... By ‘imminent’ is meant that the possible use must at least be capable of definition. It is not necessary that the lands be put to this use in any definite time after their purchase, but the carrier must be able to point out with reasonable clearness the probable future use which is to be made of them.” (*Texas Midland R.*, 75 I.C.C. 1, 162 [1918].)

²⁸ *Knoxville v. Knoxville Water Co.*, 212 U.S. 1, 9-10, 13-14 (1909).

²⁹ In one instance where a gas plant was suddenly superseded by the adoption of a new process, the Supreme Court held that the lower court should have allowed in the rate base either the

be the case if the absence of a sufficient depreciation reserve is no fault of the company.³⁰

It often happens that property which has been superseded for normal operations is retained as emergency or stand-by equipment. Where the company retains the old property in good faith, there is no impropriety in including the property in the inventory of used and useful property; but such property must be valued with some regard to its reasonable worth as stand-by equipment.

(6) *Property acquired incidentally in the purchase of other property*, but which is not used or useful in the public service, has no place in the inventory. Such property is commonly land, and where the utility enjoys the privileges of eminent domain, there is no excuse for acquiring property not required for the public service unless it is cheaper to purchase an entire tract than to acquire a part through condemnation proceedings. Where the purchase of such property can be thus justified, there would seem to be no injustice in its inclusion in the rate base, at least temporarily. But the utility should be expected to dispose of such unused property as soon as possible without unnecessary sacrifice. Mergers and consolidations have also occasioned the acquisition of unnecessary and excess property, but in such situations the utility is usually able to show sufficient public use of the duplicate equipment to cause the commission to include it in the inventory.³¹

(7) The last category of property includes that which is *unrelated to the performance of the utility's public duties*. The corporation may be engaged in some non-utility enterprise. Or investments may have been made in the sale of merchandise or appliances, as is customary with electric and gas companies, or in the operation of amusement parks, an undertaking not uncommon with street railways in the past. The company may seek to provide educational or recreational facilities, dwellings, or other property for the personal use of its workers or officers. The general rule should be that all these enterprises must be kept wholly distinct from the utility business and that under no circumstances should they cause any enhancement in costs of the utility service to the consumers.³²

UNIT COSTS. Wherever a utility's inventory contains many items of the same type, it is customary to develop unit costs to be applied to the inventory quantities in arriving at the final reproduction-cost figures.³³ The determination of accurate unit costs is of paramount importance if the final appraisal is

unamortized cost of the superseded plant or the value of the patent rights which the gas company had acquired. (*Pacific Gas & E. Co. v. San Francisco*, 265 U.S. 403 [1924].)

³⁰ *Infra*, Sec. 6.

³¹ *New York & Richmond Gas Co. v. Prendergast*, P.U.R. 1925E, 19, 33, 10 F. (2d) 167 (E.D.N.Y., 1925); *Ben Avon Borough v. Ohio Valley Water Co.*, P.U.R. 1921E, 471, 478, 271 Pa. 346, 114 Atl. 369 (1921); *Re Southern California Telephone Co.*, P.U.R. 1922C, 97, 114 (Cal., 1921).

³² *St. Joseph Stock Yards Co., v. U.S.* 298 U.S. 38 (1936); *Denver Union Stock Yard Co. v. U.S.*, 304 U.S. 470 (1938); *Consolidated Gas Co. v. Prendergast*, 6 F. (2d) 243 (S.D.N.Y., 1925).

³³ For many types of construction, it is not possible to develop unit costs, and each item must be appraised individually. Thus for excavations, grading, rail, poles, wire, et cetera, unit costs may prove useful; but buildings, land, and other property for which standard units cannot be established must be subject to individual appraisals.

to be accurate, for slight variations in the unit costs for items which are present in large quantities will cause substantial variations in the final results.

Unit costs may be defined as the representative prices that would be paid by a utility for property constructed or purchased by the usual methods. The unit costs include the total cost of the units in place and ready for use. They are also "theoretical" rather than "factual" in the sense that few, if any, are to be found already formulated in the company's books or in other records that are available for consultation. Few, if any, of the unit costs are capable of absolute and exact determination, especially the labor costs, so that resort must necessarily be had to estimate and judgment.

Unit costs are largely influenced by the assumptions that control the particular reproduction-cost determination: whether average, trend, spot, or normal prices are adopted as the standard; whether piecemeal or wholesale construction is predicated; whether the work is done by a contractor or whether the utility serves as its own contractor, perhaps even doing some of the work itself. Even when the basic assumptions are clear, the unit costs for a particular type of work will differ greatly according to the assumptions made with respect to construction conditions; that is, the source from which materials are brought, the methods of transportation employed, the disposition of waste materials, the weather conditions, the character of the labor force and freedom from strikes and other labor troubles, the number and seriousness of the accidents encountered, the accuracy of the preliminary engineering work, et cetera. As the occasions for wide variations and serious errors are omnipresent and inescapable, the development of accurate and fair unit costs imposes great responsibilities on regulatory authorities.

The general objective is clear. Representative unit costs are sought. These unit costs should contain every element of cost that can be determined and allocated for each category of property. In order that the result may be just and fair, all relevant facts must be considered, the actual experience of the utility reviewed, and sound judgment used in resolving all questions of conflicting assumptions and evidence.

The composition of the unit cost. The unit cost should contain every element of cost that can be determined and allocated to the particular unit, installed and ready for use. The elements to be included in the unit cost will vary with the nature of the property being appraised. In general, unit costs may be said to embrace the following elements, in so far as they are appropriate and capable of determination: (i) the cost of the item as purchased; (ii) the cost of transportation from the place of purchase to the location of the utility; (iii) the cost of purchasing; (iv) the engineering costs in preparing specifications and inspecting the item; (v) the costs of storage in warehouse or material yard; (vi) losses and breakage in storage and installation; (vii) the costs of installation, including local transportation and supervision.³⁴

The compilation of unit costs. In the compilation of unit costs the first

³⁴ "Ordinarily the cost of a unit divides itself into three parts:

"(a) The cost f. o. b. some point, usually the point of origin.

"(b) The cost of transporting, handling, storing, etc., up to the time it is put in place, or in some instances taken out of the material yard for the purpose of being placed in position.

"(c) The cost of installation proper." (*Texas Midland R.*, 75 I.C.C. 1, 135 [1918].)

questions concern the sources of data. The predilections of utilities for the opinion evidence of experts makes it necessary to stress the unsatisfactory character of such data; the testimony of experts is not capable of objective verification and test, and is almost inevitably biased in favor of the party for whom the testimony is presented. The prices actually paid by the utility in question are an important source of information, and are always subjected to careful study and analysis; but such actual costs are not necessarily controlling, since the quest is for representative costs as of the date of valuation. In accepting as evidence the costs reported by the utility, commissions are advisedly critical of payments made to affiliated interests and of claims based on piecemeal construction. The catalogues of manufacturers, quotations and bids submitted by manufacturers and contractors, and trade journals may supply data which are capable of verification and comparison with other sources of information; but it should be noted that quotations by manufacturers and contractors in response to inquiries are seldom as low as the figures that would be submitted if there were competition for a specific construction project.

Probably no regulatory authority has developed unit costs with the care and accuracy which the Interstate Commerce Commission has displayed. The railroads were required to list their construction work and purchases of materials and equipment for the five or ten years prior to the valuation date. As designated by the Commission, full and complete data were submitted for each type of construction work, for representative purchases of materials and equipment, and for labor costs, based on the actual compensation paid to each type of labor. This information was verified by the commission's staff and checked by reference to the contractor's bids, manufacturers' catalogues, and personal interviews with important manufacturers and suppliers of materials. The data thus assembled and analyzed were thereupon submitted to a special board of engineers experienced in railroad construction, and the final unit costs for each inventory category were derived and applied. While actual costs were considered, such figures were not controlling; prices representatives of average conditions were held to be more reliable than the costs of any single carrier.³⁵

Types of unit costs. Utility appraisals have led to the development of several types of unit costs, which, for convenience, may be designated as "actual," "spot," "average," "trend," "predicted," and "normal" prices. Each type has its appropriate use, and each is quite unacceptable under some circumstances.

"Spot" prices are those prevailing at the time the valuation is made. Commissions and courts have normally been loath to accept "spot" prices in utility appraisals on the ground that they may not be representative.

"Actual" prices, the appropriate standard where the original cost of the utility property is sought, are not controlling in the finding of the reproduction cost. Although some commissions have gone so far as to rule that actual prices should be disregarded, regulatory authorities generally are agreed that

³⁵ *Texas Midland R.*, 75 I.C.C. 1, 136 (1918); *San Pedro, Los Angeles & Salt Lake R. Co.*, 75 I.C.C. 463, 474 (1923), 97 I.C.C. 737 (1925); *Norfolk Southern R. Co.*, 84 I.C.C. 693, 695 (1925); *Central R. Co. of N. J.*, 149 I.C.C. 659, 684 (1929).

the prices actually paid by the company constitute only one line of evidence on the basis of which the unit costs should be developed.

"Average" prices have commonly been used in valuations of public utilities. Such prices are thought to be more representative than those prevailing in the particular year when the valuation chances to be made. The use of average price is also defended on the ground that, as no utility could be reproduced in a short space of time, average prices are the best indication of the costs of reconstructing the property. Five-year averages have been frequently utilized, and in some instances ten-year averages have been held to be reasonable. Average prices become unacceptable when economic changes intervene to make past prices unrepresentative of the present and future.

"Trend" prices are those based upon the statistical trend of past and present prices. Their nature may be suggested most simply by the plotting of a price series and fitting a trend line to the points shown. If, for illustrative purposes, it be assumed that the following price series be characteristic of certain materials used in utility construction, the nature of the unit prices may be demonstrated:

Year	Price	Year	Price
1	60	6	85
2	65	7	95
3	75	8	90
4	70	9	105
5	80	10	100

If the property be valued as of the tenth year, the spot price would be 100; the average price would vary with the term of the average—the ten-year average is 82.5, while the five-year average is 95. The trend price also depends upon the term for which the trend is determined: if a trend line is fitted to the data for the ten-year period, the trend price is nearly 105; if the five-year period be chosen, the slower rate of increase in the last five years is reflected in the trend price of approximately 103. Though sometimes used by commissions, trend prices are quite unreliable unless there is reasonable certainty that the underlying economic conditions will continue unchanged in the future.

The so-called "split inventory" method was developed by some commissions in the 1920's. This practice consisted in applying prewar prices to as much of the property as was constructed prior to the wartime increase in prices while including property subsequently acquired at its actual cost. In practice, however, the "split-inventory" method was less a device for pricing an inventory of utility property than a search for an acceptable compromise between original and reproduction costs in a period when present prices seemed abnormally high.³⁶

³⁶ Though the split-inventory method has been before the Supreme Court in at least three cases, there has been no clear ruling as to its propriety. See *Southwestern Bell Tel. Co. v. Comm.*, 262 U.S. 625 (1923); *Bluefield W. W. & Imp. Co. v. W. Va.*, 262 U.S. 679 (1923).

Although there has been much discussion of "normal" prices as the objective in preparing unit costs, normal prices are not practicable measures for the valuation of utilities. It is not that normal prices would not be satisfactory and acceptable to both utility and regulatory authority, but that the discovery of such normal prices in a world of change is usually impossible. As the term is employed by the Interstate Commerce Commission, "normal prices" has several connotations: abnormal or unrepresentative prices are to be rejected; prices are normal in the sense of applying to all carriers similarly situated, not simply to the particular carrier; prices are normal in the sense that they include all the elements of costs associated with the item of property being appraised; and prices are normal with regard to the period of time for which the property is valued.³⁷ In these senses, any prices adopted, whether spot, average, trend, or otherwise, are acceptable only to the extent that they are "normal"; but normal prices do not constitute a type distinct from the others under discussion.

THE ASCERTAINMENT OF THE FINAL APPRAISAL FIGURE. The ascertainment of the final appraisal figure for the physical property other than land is accomplished by multiplying the quantities shown in the inventory by the appropriate unit prices. The result is the cost of reproduction new. The valuation of a utility property also requires the determination of the cost of reproduction less depreciation, which is considered subsequently under "Deductions from Gross Value."³⁸

3. THE VALUATION OF LAND³⁹

Land occupies a special status in utility valuations as a result of both economic and legal factors. From the economic standpoint, the special character of land arises from the facts that land does not usually depreciate but in growing communities tends rather to appreciate in value, that the utility of land is not inevitably destroyed for other purposes when it is devoted to a particular use, and that improvements made to land merge into the land and become inseparable from it. The special legal status of land for utility purposes is the result of judicial precedents, and is evidenced in the application to land of valuation techniques different from those applied to other types of property.

ORIGINAL COST. *Its meaning.* The connotation of original cost as applied to land is the same as with respect to other forms of property. It signifies the actual cost of the land to the utility, including the costs of acquisition and any other sums that had to be expended in addition to the formal consideration paid for title to the property. If the utility is not equipped with the power of eminent domain, the payment of hold-up prices and the general increase in the level of prices demanded may force the utility to pay far in excess of what other similar sites in the vicinity would cost other purchasers; and even if the utility takes the land requisite for its purposes by condemnation, the costs

³⁷ *Texas Midland R.*, 75 I.C.C. 1, 136 (1918); *Gulf & N. Ry. Co.*, 114 I.C.C. 506 (1926); *Illinois Term Co., Excess Income*, 184 I.C.C. 289, 295 (1932).

³⁸ *Infra*, Sec. 6.

³⁹ This material has appeared as "Measures of Land Value for Utility Regulation," in 39 *Mich. L. Rev.*, 37-58 (Nov., 1940).

of condemnation, the payment of severance damages, and the high prices characteristic of condemnation proceedings will certainly impose substantial costs on the company.

Difficulties in the determination of original cost. For the older utilities, serious difficulties may be encountered in the attempt to determine the original cost of their land holdings. Land was usually the first property to be acquired, and since replacements do not normally occur in the course of operations, there are no subsequent occasions for supplementing inadequate cost records. More frequently than in the case of other forms of property, land may be acquired for nonmonetary considerations, and more often than not, the consideration recited in the deed by which the property is transferred is not the real consideration. Further difficulties are encountered in the frequent necessity of acquiring more land than is required in the public service; where such unused property has been disposed of by the utility, the sum received may be deducted from the original cost to find the actual cost of the useful property, but where the non-useful property is still owned by the utility, there may be no acceptable basis for the segregation of the costs of the two parts of the tract. So serious were these difficulties that, despite a Congressional mandate, the Interstate Commerce Commission was unable to determine the original cost of carrier lands for a large proportion of the railroads.⁴⁰

Legal status of original cost. The legal status of original cost in the appraisal of lands is the result of dicta and usage rather than of judicial decision. In the earlier *Consolidated Gas* case, the Court suggested that utilities were entitled to the benefit of increases in the value of their land and similar rights,⁴¹ and in *The Minnesota Rate Cases*, Mr. Justice Hughes also appeared to reject original cost as the standard for land valuations.⁴² Most commissions and courts have not regarded original costs as significant in determining the value of utility lands.

Despite these judicial slights, original cost has continued to be used under special circumstances in arriving at land valuations. The Federal Power Commission is required by the Federal Water Power Act to find the net investment cost of hydroelectric projects developed under federal license, and in these determinations, lands are included at their actual original cost, provided this is not more than their fair market value at the time of acquisition.⁴³ And as will appear in a later part of the present section, the Supreme Court appears to incline to original cost as the acceptable measure of the fair value of natural-gas lands and leases.

Adherents to the prudent-investment program of rate regulation have

⁴⁰ *Texas Midland R.*, 75 I.C.C. 1, 164-165 (1918).

⁴¹ *Willcox v. Consolidated Gas Co.*, 212 U.S. 19, 52 (1909).

⁴² "It is clear that in ascertaining the present value we are not limited to the consideration of the amount of the actual investment. If that has been reckless or improvident, losses may be sustained which the community does not underwrite. As the company may not be protected in its actual investment, if the value of its property be plainly less, so the making of a just return for the use of the property involves the recognition of its fair value if it be more than its cost. The property is held in private ownership and it is that property, and not the original cost of it, of which the owner may not be deprived without due process of law." (230 U.S. 352, 454 [1913].)

⁴³ *Alabama Power Co. v. McNinch*, 94 F. (2d) 601 (App. D.C., 1937); *Re Alabama Power Co.*, P.U.R. 1932D, 345, 353-354 (F.P.C., 1932).

wavered between original cost and present value, though the logic of prudent investment would certainly indicate the use of original-cost figures for lands as well as for other properties.⁴⁴

THE REPRODUCTION-COST METHOD. The use of the reproduction-cost method to determine the value of lands met its Waterloo in *The Minnesota Rate Cases*. The "reacquisition costs" accepted by the lower court had been built up by taking the present value of similar adjacent lands, developed largely from opinion evidence, as the base value; to this were added the special costs which it was assumed the railroad would experience in acquiring a continuous strip of land suitable for railroad use—this sum, the so-called "market value" or "what it would cost the railroad to acquire the land," being developed on the basis of opinion evidence; the "value for railway purposes" was derived by multiplying the "market value" by 1.30 for terminal properties and by 2.00 for rural lands to allow for improvements assumed to be found on the lands, consequential and severance damages, and the expenses of acquisition. By this method terminal lands which had cost the carrier \$4,527,228.76 were included in the valuation at \$17,315,869.45.

Confronted with such exaggerated claims submitted in the name of the reproduction-cost theory, Mr. Justice Hughes's condemnation of this method of appraising land was sweeping and conclusive:

"Moreover, it is manifest that an attempt to estimate what would be the actual cost of acquiring the right-of-way, if the railroad were not there, is to indulge in mere speculation. . . . The assumption of its nonexistence, and at the same time that the values that rest upon it remain unchanged, is impossible and cannot be entertained. The conditions of ownership of the property and the amounts which would have to be paid in acquiring the right-of-way, supposing the railroad to be removed, are wholly beyond reach of any process of rational determination. The cost-of-reproduction method is of service in ascertaining the present value of the plant, when it is reasonably applied and when the cost of reproducing the property may be ascertained with a proper degree of certainty. But it does not justify the acceptance of results which depend upon mere conjecture. . . ."⁴⁵

THE PRESENT-VALUE STANDARD. *Its origin and legal status.* The present-value standard for the appraisal of utility lands evolved from the Supreme Court's decision in *The Minnesota Rate Cases*. Having rejected the so-called reproduction method of valuing land and holding that actual original cost, even if it could be ascertained, might be inconsistent with the present-fair-value

⁴⁴ See the dissenting opinion of Commissioner Eastman in *San Pedro, Los Angeles & Salt Lake R. Co.*, 75 I.C.C. 463, 535-537 (1923), and the Prudent Investment Bill in the "Report of Commission on Revision of the Public Service Commissions Law," New York, Legislative Document No. 75 (1930), pp. 411-422. See also *Bay State Rate Case*, P.U.R. 1916F, 221, 252-253 (Mass., 1916).

Even the California Commission, which has applied the prudent-investment principle in its regulation of rates, has tended to take land at its present value. (*Re Imperial Utilities Corp.*, 31 Cal. R.C.R. 539 [1928]; *Re Los Angeles G. & E. Corp.*, P.U.R. 1931A, 132, 142-143 [Cal., 1930]; *Re San Jose Water Works*, 36 Cal. R.C.R. 803 [1931]. *Contra: Re Great Western Power Co.*, P.U.R. 1923C, 545, 554-556 [Cal., 1923].)

⁴⁵ 230 U.S. 352, 452 (1913).

standard as applied to other properties of utility corporations, the question remained as to what extent the carriers were entitled to the benefit of any appreciation in the value of their land holdings. The opinion advanced the proposition that the maximum measure of the value of utility lands should be "the fair average of the normal market value of land in the vicinity having a similar character." The "rule" as to the lawful measure of fair value for lands reads:

*"Assuming that the company is entitled to a reasonable share in the general prosperity of the communities which it serves, and thus to attribute to its property an increase in value, still the increase so allowed, apart from any improvements it may make, cannot properly extend beyond the fair average of the normal market value of land in the vicinity having a similar character. . . . The company would certainly have no ground of complaint if it were allowed a value for these lands equal to the fair average market value of similar land in the vicinity, without additions by the use of multipliers, or otherwise, to cover hypothetical outlays."*⁴⁶

It may be remarked that the present-market-value standard was proposed with no discussion of its advantages or disadvantages; it appeared in the guise of dictum as a counterpoise to the exaggerated claims of the railroads. The true character and significance of this measure of land values has never been subjected by the Court to the searching analysis which its importance would seem to require. In subsequent decisions of the Supreme Court, the market-value rule has been mentioned with approval,⁴⁷ and on the basis of this approval, the method has been quite generally adopted by the regulatory commissions of the country.

The measurement of present value. The present value of utility lands is obtained by multiplying the number of acres of each category of land by a figure which is a fair average of the normal market value of similar lands in the vicinity.

Actual field appraisals are always necessary, not only to determine the character and extent of the utility's holdings and to identify the similar parcels of land in the vicinity whose market value is to be sought, but also to judge the reasonableness of the value figures developed.

Three classes of evidence are considered in arriving at the fair average of the normal market value of similar adjacent lands: the sale prices of similar adjacent parcels of land, the assessment figures for tax purposes, and the opinion of experts familiar with local real-estate values.

Actual sale prices are considered the best evidence of the market value of adjacent lands. It must appear that the adjacent lands whose prices are available are really similar to the utility's, and the sales must be representative, that is, not accompanied by any special circumstances that would enhance or depress values. Thus sales to the utility itself come under suspicion lest the

⁴⁶ *Ibid.*, 455. Italics supplied.

⁴⁷ See *Denver v. Denver Union Water Co.*, 246 U.S. 178 (1918); *Galveston Elec. Co., v. Galveston*, 258 U.S. 388 (1922); *Georgia Ry. & P. Co. v. Comm.*, 262 U.S. 625 (1923); *McCardle v. Indianapolis Water Co.*, 272 U.S. 400 (1926).

consideration reflect prospective earnings of the company. The sales must be recent, and there must be confidence that the true consideration has been determined.

Assessment for tax purposes must be used with extreme caution. It cannot safely be assumed that the assessed values of real estate conform to market values. However, if real estate in a community has been assessed uniformly, there may be a consistent relation between assessments and market values which will make it possible to develop a reliable ratio of sales prices to assessed values for the purpose of finding an imputed market value for utility lands.

Although perhaps not so reliable as other lines of evidence, opinion evidence is used to supplement the conclusions drawn from sales and assessment figures. It is, of course, requisite that the witnesses be properly qualified and that their testimony be supported by relevant and demonstrable evidence.

Many additional considerations are frequently urged on commissions in their appraisal of utility lands. The special adaptability of the lands to the utility use, while often stressed, is likely to be accorded only limited consideration.⁴⁸ Prospective or actual earnings attributable to lands are obviously inappropriate. Condemnation awards, either actual or estimated, are usually held to be irrelevant. Although theoretically overhead costs are not allowable in the appraisal of lands, such items do appear in some commissions' valuations. There is general agreement, however, that such specific elements as assemblage values, severance damages, and the like are not to be included in appraisals on the present-value basis.

Natural-gas lands and leases. Natural-gas lands and leases have presented one of the most difficult problems encountered in the appraisal of utility lands.⁴⁹ When applied to the natural-gas fields and leaseholds, the present-value rule exhibits special infirmities which have lead some regulatory bodies, including the Supreme Court, to abandon present market value as the standard in favor of a cost standard.

The cases involving the United Fuel Gas Company will serve to develop the problem. In a proceeding before the West Virginia Public Service Commission, the company claimed a present value of \$36,449,176.00 for "gas lands, leaseholds and rights" whose "book cost" did not exceed \$6,732,920, the appreciation exceeding the asserted value of all its other property. The claim for appreciation in the value of the gas properties was based upon two types of opinion evidence. There was testimony as to the sums at which the properties could be sold; and estimates, based on the assumed capacity of the fields and the prospective price at which the gas could be sold, were presented of the earnings which the company might expect to realize.⁵⁰ Both the Commission and the West Virginia Supreme Court pointed out that the evidence

⁴⁸ *Minnesota Rate Cases*, 230 U.S. 352, 443-456 (1913).

⁴⁹ Questions as to what lands and leases should be included as used and useful property may be ignored in the present analysis. Most natural-gas companies control their producing areas through leases rather than by ownership of the properties. Gas companies commonly have four classes of gas leaseholds: properties that are in active production; lands that are proven but are not in operation; probable lands, unproven and unoperated; and "merely prospective gas lands."

⁵⁰ *Re United Fuel Gas Co.*, P.U.R. 1920C, 583, 589-591 (W.Va., 1919).

failed to support the company's claims: it was noted that to base market value upon prospective earnings was not permissible where the earnings depended upon the rates that were being regulated. The appeal directly to exchange or market value for natural-gas leases was rejected on the ground that the estimate was not supported by adequate evidence; that the so-called "open market" for such leases should be more precisely identified and characterized; and that if a natural-gas utility were the assumed purchaser (and such companies would be virtually the only conceivable purchasers), its offer would not be competent to show fair value in a rate case, since the offer would rest indirectly upon the earnings of a public utility.⁵¹

The United Fuel Gas Company also operated in Kentucky, and finally, on January 2, 1929, two cases involving this company, one from Kentucky and the other from West Virginia, reached a decision in the Supreme Court.⁵² In the lower federal court, book value had been adopted as the measure of the fair value of the company's gas leaseholds for rate purposes.⁵³ After a description of the character of the evidence introduced in support of the claim for the alleged appreciation in the value of the gas lands and leases,⁵⁴ Mr. Justice Stone's opinion set forth objections which would appear to be fatal to any attempt to employ the market-value standard in the appraisal of natural-gas lands and leases:

"... In both methods of valuation, the value of property used in a business whose rates are regulated is made to depend on an assumed earning capacity, and the data relied on to establish assumed earning capacity are themselves essentially speculative—so much so as to form no trustworthy basis for the computation of value.

"It is true that a part of appellants' business is not regulated at present. . . . The unique character of appellants' control over a natural product, limited in amount, asserted here as a basis of value, the obvious necessity of securing franchises or special privileges to enable them to distribute their product to consumers under the conditions assumed, and other circumstances which subject them to regulation in Kentucky and West Virginia, make inadmissible the assumption that the price to consumers would remain unregulated elsewhere.

"And in other respects the assumed earning capacity is so wanting in probative force as to require its rejection in the circumstances here disclosed. . . .

"On the record as made, appellants have failed to present any convincing evidence of value of their gas field which would enable us to assign to it any greater value than that which they appear to have assigned to it on their books. This book value, therefore, may be accepted not as evidence of the real value of the gas field, but as an assumed value named by the appellants, which, on

⁵¹ P.U.R. 1920C, 583, 591-605. See also *Charlestown v. Public Service Comm.*, 95 W.Va. 91, 120 S.E. 398 (1923); and *Natural Gas Co. of W.Va. v. Comm.*, 95 W.Va. 557, 121 S.E. 716 (1924).

⁵² *United Fuel Gas Co. v. Railroad Commission of Kentucky*, 278 U.S. 300, and *United Fuel Gas Co. v. Public Service Commission of West Virginia*, 278 U.S. 322.

⁵³ *United Fuel Gas Co. v. Railroad Commission of Kentucky*, 13 F. (2d) 510, 518-520 (E.D. Ky., 1925).

⁵⁴ The volume of gas reserves was estimated and calculations were made of the revenue that could be derived by selling the gas to industrial consumers in Pittsburgh. (278 U.S. 300, 314-316.)

the evidence presented cannot reasonably be fixed at any higher figure."⁵⁵

In rejecting the application of the market-value test in the *United Fuel Gas* case, the Court did not go so far as to rule that present value might never be applied in the appraisal of gas leaseholds,⁵⁶ but the defects in the proof that were so prominent in this case would seem to be inescapable in any attempt at a market evaluation of natural-gas lands. Furthermore, the acceptance of book value in default of market value should afford no precedent for the general adoption of book-cost figures. The infirmities of book values in an industry characterized by a multiplication of affiliated corporations whose accounting practices are not subjected to the strictest regulatory supervision are too obvious to require enumeration.

The affirmative adoption of a legal standard for the valuation of natural-gas lands and leaseholds awaits further rulings by the Supreme Court. The one appropriate standard is the actual reasonable cost of the leases. There would appear to be no reason why a public utility exploiting a natural resource should be allowed to appropriate for itself any of the value of the natural resource. The principle is already established with reference to hydroelectric projects developed under federal license; investors are entitled to a fair return upon their investment but to no additional income by reason of their right to exploit a natural resource. It may be objected that the water-power rights are assumed to be the property of the whole people, while the ownership of natural gas, or the right to appropriate it, belongs to those who control the surface and have the right to drill gas wells. But if the appeal is from the analogy to other public utilities—where regulation presumably limits return to a fair percentage on the property devoted to the public service—to other industries (as coal and petroleum) engaged in the exploitation of natural resources, it must be realized that these industries operate under competitive prices, and that the competitive payment for the natural resource (royalty payment) is presumably made only for relatively superior resources, the marginal resources earning no royalty or "economic rent." The monopolistic position of the natural-gas utilities with respect to their market makes the analogy to the competitive coal or oil industries imperfect, and of course the presence of active competition would have to be presupposed to justify an absence of regulation. Clearly, reproduction (or reacquisition) cost and market value are illogical, impractical, and indefensible standards for the valuation of natural-

⁵⁵ 278 U.S. 300, 317-318.

⁵⁶ It may be noted that the courts of Pennsylvania and New York have apparently been willing to accept the market-value standard supported by evidence that has been considered unacceptable in other jurisdictions. (*Erie v. Comm.*, 278 Pa. 512, 123 Atl. 471 [1924]; *Penna. Gas Co. v. Comm.*, 204 App. Div. 73, 198 N.Y. Supp. 193 [1923], and 211 App. Div. 253, 207 N.Y. Supp. 599 [1925].)

The case, in support of the present-value standard for natural-gas lands may be summarized in three arguments: (1) all utility property should be treated uniformly; the present-value standard applies to other types of utility property and should be applied to rights in natural-gas properties as well; (2) the "economic rule of equality of exchange" governs all transactions in regulated and unregulated enterprise alike (this argument definitely identifies present value, as used in regulated enterprises, with market or exchange value); and (3) securities have been issued and property rights have become fixed in the light of the established principles of regulation—hence to depart from the present-value standard would be to the prejudice of innocent third parties, investors and others.

gas leaseholds. No case can be made for book value. Hence, actual cost or investment, both on the basis of economic principle and in default of an alternative standard, appears to be the one basis for the valuation of property rights of utilities in natural-gas fields. Perhaps such a development is foreshadowed in the *Dayton Power & Light* case, where book-value figures were adjusted downward by the Ohio Public Utilities Commission and this standard was accepted by the Supreme Court.⁵⁷

The theoretical basis of the present-value standard. There is little to distinguish between present value, the legal standard, and market value, the measure, in the valuation of utility lands; for all practical purposes, the standard is market value. The market-value standard has been rejected as an acceptable measure of the value of utility structures for two reasons: (i) that market value cannot be determined because utility properties are not bought and sold under conditions that identify a "market price"; and (ii) that the adoption of the market-value standard would involve circular reasoning, inasmuch as market valuations would depend upon earnings, which depend upon the rates. Why are these same objections not conclusive against the application of the present-value standard to lands?

The decisions of the Court have proceeded upon the hypothesis that there is an ascertainable market value for land. It is, of course, axiomatic that the value of land depends upon the income it yields (the economic rent); but it is assumed that the income-producing capacity of land is independent of the rates which the utility is allowed to charge. This assumption rests upon the supposed indestructible qualities of land; presumably the utility might expect to be able to dispose of land to other prospective users, and the sum which they would presumably pay is taken as the measure of its present value for purposes of utility rate regulation.

The market-value standard immediately encounters difficulties when land is asserted to have some peculiar value to the utility. To claims for "railway values" and other special values, the Court has returned a negative answer. The refusal to consider special railway values was predicated upon the assertion that the railroads, having the power of eminent domain, might condemn the necessary property, and the compensation awarded would be measured by the value of the property to the owner whose property was condemned, not by its value to the taker of the property. Yet certain flaws in the consistency of this argument may be noted: present value does not include the "costs of acquisition" or "consequential and severance damages," which are a part of the condemnation costs. It is only in the appraisal of natural-gas lands that the circular reasoning implicit in the use of the market-value standard has been recognized.

⁵⁷ *Dayton P. & L. Co. v. Comm.*, 292 U.S. 290 (1934). The investment cost of the leases was apparently \$4,730,444; the Commission allowed an appraisal of \$7,284,900; while criticizing the Commission's figures as too high, the Ohio Supreme Court affirmed the order; and Mr. Justice Cardozo, in commenting on the rejection of figures for present value and market value by the Ohio authorities, remarked: "If those data were unacceptable, the only others left were the entries in the books, and these perforce were followed for lack of anything better." (Pp. 302-303.)

For the opinions of the Ohio Court, see *Logan Gas Co. v. Comm.*, 124 Ohio St. 248, 177 N.E. 587 (1931); *Columbus G. & F. Corp. v. Comm.*, 127 Ohio St. 109, 187 N.E. 7 (1933); *Dayton P. & L. Co. v. Comm.*, 127 Ohio St. 137, 187 N.E. 18 (1933).

Criticisms of the present-value rule. The present-value rule for the appraisal of utility lands has been criticized as theoretically unsound and as faulty in its application. Some of the more basic theoretical objections have just been noted. Certain weaknesses may be itemized.

(1) The rigid application of the standard of the "fair average of the normal market value of similar adjacent lands" may work serious injustice to the utility. In the absence of appreciation in the value of the similar adjacent land, the rule may deny the right to a return on legitimate elements of cost inevitably incurred in the acquisition of necessary land.⁵⁸ And if the present-market-value rule be strictly construed, it is altogether possible for the presence of a utility plant so to depreciate the value of the surrounding real estate as to prevent the utility from ever having a fair return on that part of its investment.

(2) The rejection of the "unit" valuation of utility real estate⁵⁹—that is, refusing to value the site and the structures thereon together—offers a target for valid criticism. Land and buildings, according to the prevailing methods of appraisal, are valued separately: the structures are given their full value (perhaps on the basis of reproduction cost even when the existing buildings would never be reconstructed); and the site is valued as though unencumbered with buildings which, in actuality, would have to be razed before the land could be sold, or the price for the site would have to be lowered by at least the cost of removing the structures. If market value be the measure of the legal standard for the appraisal of lands, the site value should reflect the costs involved in making the site available for use.⁶⁰

(3) The assumption that utility lands would have a value equivalent to that of similar adjacent lands, if the company were in a position to dispose of its land, has also been challenged. It has been pointed out that in so far as railway rights-of-way are not used for railroad purposes they are of no value, and that urban lands must usually be disposed of at great sacrifices, encumbered as they are with specialized structures and frequently being irregular in shape.⁶¹

(4) Both the justice and the economic wisdom of the present-value rule have been repeatedly called in question, especially by those who believe the prudent-investment principle to be the sound basis for utility regulation. In effect, the present-market-value standard gives the utility an artificial and unearned increment when surrounding lands appreciate in value. The increment is unearned, since the utility is not responsible in any determinable measure for the increase in the value of the surrounding lands; it is artificial, because so long as the land is retained in the public service, there is no possibility of the utility taking advantage of rising real estate values and certainly there is no increase in the value of the property for the purposes of utility opera-

⁵⁸ Note the dissenting opinion of Commissioner Daniels in *Kansas City So. Ry Co.*, 75 I.C.C. 223, 269-270 (1919).

⁵⁹ *N. Y. Tel. Co. v. Prendergast*, 36 F. (2d) 54, P.U.R. 1930B, 33, 45-46 (S.D.N.Y., 1929); *Manitowoc v. Wisconsin Fuel & Light Co.*, P.U.R. 1927D, 737, 741 (Wis., 1927).

⁶⁰ This procedure was suggested in a *New York Telephone Company* case, in the dissenting opinions of Chairman Prendergast and Commissioner Van Namee, P.U.R. 1926E, 1, 99-100 (N.Y., 1926).

⁶¹ See Commissioner Eastman's dissenting opinion in the *San Pedro, Los Angeles & Salt Lake R. Co.*, 75 I.C.C. 463, 535 (1923).

tions.⁶² Indeed, where it has taken property by eminent-domain proceedings, the utility usually has a limited deed only, its continued possession of the property being conditional upon its employment in the public service; hence it would have no right to dispose of the property in a free market such as is available for adjacent lands. In this respect it may be said that the lands of the utility are not similar to those adjacent lands which are not employed in the public service.

The large fixed investments which utilities usually make on their land holdings effectively withdraw all such sites from a free market. The value of these sites, like the value of other fixed investments, will necessarily depend upon the profitability of the enterprise. Furthermore, it may be noted that even with respect to the market values of adjacent lands, they do not fluctuate with the "general prosperity of the community" nor with changes in the general level of prices; their values respond sensitively and violently to changes in the local real estate market, to the costs (largely construction costs) incidental to the employment of land, and to variations in the rates of growth of population and business activity.

IN CONCLUSION. Despite the fact that the present-market-value standard is widely followed by regulatory authorities, the Supreme Court itself has not affirmatively ruled that such is the only acceptable standard for the appraisal of utility lands. The matter is of such importance that it is hard to understand why regulatory commissions have been willing to allow this decision to go by default. It would be a definite step in the direction of sound system of rate regulation if the present-market-value standard, which has no real significance in the relations between the utility and its patrons, should be abandoned in favor of an actual-cost standard. The adoption of the cost standard would protect the investment of utility corporations in a way that is not possible under the adjacent-market-value rule, and would assure that all costs imposed upon the utility in the acquisition of its lands would find recognition in the establishment of rates; the consuming public would benefit by the greater definiteness and certainty that would attach to valuation procedures, and by the elimination of the possibility that they might be called upon to pay a return on land values inflated as a result of public improvements to which they have already contributed in taxes.

4. OVERHEAD COSTS

THE GENERAL NATURE OF OVERHEADS. The expenditures for physical property do not embrace all of the costs which are necessarily incurred in the construction and equipment of a plant. Preliminary even to the organization of the enterprise, there are expenses attributable to the work of the promoter and others. The creation of the corporation imposes other costs—for incorporation fees and the services of attorneys. There are the expenses of employing engineers to prepare estimates, plans, and specifications; contracts must be drawn and let. A general executive and clerical staff must be paid for carrying

⁶² It might be said that so long as the utility continues to utilize the land, any increase in its assessment value is to the disadvantage of the utility, since it will be required to pay higher taxes.

on the affairs of the corporation until operations begin. The raising of funds for construction and other purposes imposes interest costs. These, and other costs of a similar nature, cannot be identified with the physical property that has been inventoried and appraised; they are incurred on behalf of the business as a whole, not for particular assets. They are general overhead costs. Formally defined, overhead expenses are those necessary and legitimate costs which cannot be allocated to particular units of the physical property.

THE PROPRIETY OF INCLUDING OVERHEADS IN THE RATE BASE. General overhead costs are an inevitable and proper part of the cost of any utility enterprise. No sweeping challenge to the propriety of including overhead expenses in the rate base can be sustained against the testimony of all experience in the building and launching of utility enterprises. The commissions have almost universally included some allowance for overheads in their valuations, and the prescribed systems of accounts provide for them as capital charges. Where the question has been presented to the Supreme Court, there has been approval of the principle that overheads in some form belong in the rate base.⁶³

The difficulties surrounding the treatment of overhead expenses are not concerned with their inclusion in, or exclusion from, the rate base, but with the principles which should determine the appropriate allowances for these items. Under the precedents established by the courts, the actual costs incurred by the utility are not conclusive as to the amount of the proper allowance; indeed, in one case, in overruling the commission's rejection of an item of \$5,000 on the ground that the company offered no proof of actual expenditure, the Court, through Mr. Justice Sutherland, remarked: "Reproduction value, however, is not a matter of outlay, but of estimate, and should include a reasonable allowance for organization and other overhead charges that necessarily would be incurred in reproducing the utility. In estimating what reasonably would be required for such purposes, proof of actual expenditures originally made, while it would be helpful, is not indispensable."⁶⁴ This unfortunate tendency to minimize the importance of actual expenditures as shown in the accounting records in favor of estimates based upon opinion testimony is a direct invitation to the extravagant and unrealistic claims that have been an inescapable part of the treatment of overhead costs in reproduction-cost appraisals. As a general principle, no allowance for overheads is justifiable unless it is a necessary part of the cost of organizing the business or constructing the plant.⁶⁵ Even when the evidence establishes that overheads have been charged to operating expenses, the courts are disposed to permit their inclusion in fair value.

THE DETERMINATION OF OVERHEAD COSTS. The aggregate of overhead charges bulks large in the final valuation of utility properties, ranging from 10 to 30 per cent of the allowances for physical property. Where values of this magnitude are involved, it is imperative that the allowances accurately meas-

⁶³ *Des Moines Gas Co. v. Des Moines*, 238 U.S. 153, 165-168 (1915); *Denver v. Denver Union Water Co.*, 246 U.S. 178, 183 (1918); *Galveston Elec. Co. v. Galveston*, 258 U.S. 388, 399 (1922); *Ohio Utilities Co. v. Comm.*, 267 U.S. 359, 361-363 (1925); *Dayton P. & L. Co. v. Comm.*, 292 U.S. 290, 309-311 (1934).

⁶⁴ *Ohio Utilities Co. v. Comm.*, 267 U.S. 359, 362 (1925).

⁶⁵ *Des Moines Gas Co. v. Des Moines*, 238 U.S. 153, 165-168 (1915).

ure authentic elements of cost. Such allowances should be brought to the same tests of substantial fact and experience that are required for other parts of the valuation, and any departure from the actual expenses that the utility has necessarily incurred should be subject to the close and critical scrutiny of commissions and courts.

The alternative procedures. Three alternative procedures may be followed in ascertaining and allowing overhead expenses. (1) It would be possible to determine a specific sum for each particular overhead in the light of the particular circumstances surrounding the historical or hypothetical launching of the enterprise. Such a method would be followed if the evidence upon which overheads were allowed were the actual costs as shown by the accounting records. But where much of the evidence is concerned with estimates and opinion, other methods appear to possess advantages in economizing time and effort. (2) The second method proceeds to determine the appropriate allowance for each overhead individually as a percentage of some part of the cost of the physical property. In the remainder of this section, this method will be described in some detail as the nature of the individual overheads is analyzed. (3) The third method is the most popular. It consists in applying a single percentage to the cost of the physical property (with or without the exclusion of land), making a blanket allowance for all overhead expenses. This method will be commented on briefly toward the close of this section.

The percentage allowances. The appropriate allowances, either for individual overheads or as a blanket figure, will depend upon the assumptions as to the sequence followed in the application of the overheads, the assumed length of the construction period, and the character of the prices applied to the inventory of the physical property. Comparisons of overhead allowances, whether in the form of specific sums or percentages, are likely to be misleading and confusing because of differences in the character of the properties and the absence of uniformity in the treatment of unit costs and intangibles. Also, since there are many possibilities of duplication in the allowances for individual overheads, the percentage appropriate for any one overhead must in some measure be determined by the treatment of other overhead costs.

The base for overheads and the method of applying the percentage allowances. Theoretically, the overhead expenses are incurred from time to time preceding and during the construction of the property. Though commissions are not all agreed, the base for the calculation of overhead charges should be the cost of the physical property, exclusive of lands. In strict accuracy, items of physical property that are not acquired until after the beginning of operations, such as meters, automobiles, working capital, et cetera, should form no part of the base upon which overhead costs are determined. The exclusion of land rests upon the authority of the present-market-value rule of *The Minnesota Rate Cases*, but many commissions have allowed overhead charges on land as well as on other physical property.

In the actual construction of a property, overheads are cumulative, and in the valuation of utility properties it is proper that the percentages should be applied cumulatively. The following discussion treats overhead expenses in the order in which they are applied in the determination of the rate base.

CONTRACTOR'S PROFIT. The place of contractor's profit in utility valuations is always difficult to determine. The guiding principle must be an insistence upon a thoroughly consistent scheme of valuation hypotheses and practices. The employment of a contractor for any construction project is justified only when it is thereby possible to reduce the cost of the project, and the prerequisite for all claims for contractor's profit must be a showing that the savings therefrom have been duly recognized in other aspects of the valuation. Thus, where the work could be done as clearly by the company itself, where the unit prices are those which would apply to piecemeal construction, or where ample allowance for contractor's profit has been made in the unit prices, there should be no separate allowance. If the addition of contractor's profits is permitted, the unit costs must be those that would be charged to the contractor, not those that are paid by the utility.

A further source of difficulty lies in the duplication of costs between certain general overheads and contractor's profit. Contractor's profit is intended to cover many of the costs that are the basis of claims for engineering and supervision, insurance and damages, contingencies and omissions, interest during construction, and others. It is, therefore, essential that the inclusion of contractor's profit be balanced by the elimination of any overlapping between it and these other overhead expenses.

If the propriety of an allowance for contractor's profit be established, the calculation of the appropriate amount requires the careful segregation of the costs of those parts of the work to which the contractor's services pertain. There is no recognized standard of a normal or reasonable rate of profit by which to determine the appropriate allowance; the amount allowed must depend upon the character of the construction. The practice of having construction work performed by affiliated companies who obtain their contracts without competitive bidding has been a persistent source of extravagant claims, so that all payments to affiliated companies require critical scrutiny.⁶⁰

CONTINGENCIES AND OMISSIONS. In every large construction work there is a certainty that the final costs as estimated will be enhanced by unanticipated increases in costs. These costs arise from omissions in the estimates, unforeseen difficulties in construction, losses due to delays and destruction of property through storms and inclement weather, delays in the delivery of materials, increases in the cost of certain items, and strikes or other labor difficulties. Since additional costs are inevitably encountered in all major construction projects, it is customary for engineers to include in their estimates of costs a percentage to cover "contingencies and omissions." As a part of the reproduction-cost estimate, an additional reason for inclusion of some allowance is the possibility of omissions in the preparation of the inventory.

The propriety of including contingencies and omissions among overhead charges in the calculation of reproduction cost and the rate base is still extensively disputed. A substantial number of the state commissions have been

⁶⁰ *Re Alabama Power Co.*, P.U.R. 1932D, 345, 360-361 (F.P.C., 1932); *Cary v. Oklahoma Corp. Comm.*, 17 F. Supp. 772, 18 P.U.R. (N.S.) 512, 517 (D. Okla., 1936); *Milwaukee Elec. R. & L. Co. v. Milwaukee*, P.U.R. 1918E, 1, 13 (Wis., 1918); *Re Logan Gas Co.*, P.U.R. 1929A, 232, 235 (Ohio, 1928); *Long v. Snow Shoe Water Co.*, P.U.R. 1929A, 654, 657 (Pa., 1928); *Re Union Electric Light & P. Co.*, 17 P.U.R. (N.S.) 337, 359 (Mo., 1937).

persuaded of the validity of such claims and have made allowances which have ranged from $1\frac{1}{2}$ to 13 per cent of the cost of the physical property other than land, with 3 and 5 per cent as the common allowances.⁶⁷ Although recognized as a proper item of cost for new construction projects, the propriety of including contingencies and omissions in reproduction-cost determinations has been denied by some regulatory authorities.⁶⁸ It has been pointed out that in a carefully prepared inventory, errors are quite as likely to favor, as to prejudice, the utility, and that the tendency of appraisers to overestimate of quantity and price is quite as strong as any tendency toward underestimation. Furthermore, in the matter of unforeseen difficulties and delays, it is said that these matters are either a part of the record or can be included in the inventory or in the unit prices, since it is the identical property that is being valued.

Rejection of contingencies and omissions as an overhead charge does not preclude a recognition of these items of cost in the reproduction-cost estimate. Allowances may appropriately be made in the form of specific adjustments to the accounts to which they apply: inventory quantities may be increased to allow for losses and waste; unit prices may make allowance for unpredictable difficulties and unforeseen delays in construction. Where a general contractor is employed, ample allowance for contingencies and omissions has been made both in the contract prices and in the allowance for contractor's profits. This is the approach of the Interstate Commerce Commission in its valuation of the steam railroads.⁶⁹

ENGINEERING AND SUPERVISION. As an overhead charge, the engineering and supervision allowance includes all of those expenditures for engineering which are not chargeable to, and includible in, the unit costs of particular items of property. Among the services performed by engineers are the making of preliminary surveys, the preparation of detailed plans, the preparation of specifications for construction projects and equipment, the awarding of contracts, the inspection of the work in progress, the purchase of materials and the supervision of labor where the work is not done by contract, final tests of construction work and equipment delivered by contractors, and inspections and adjustments as the plant is placed in operation. Virtually all utilities have some engineers on their staffs, and during the construction period their salaries and expenses are chargeable to capital either as a part of the cost of specific projects or as a capital overhead. In addition, outside engineers may be employed in connection with specialized or complicated constructions.

Engineering expenses have been quite universally recognized as an appropriate element in the reproduction-cost estimate and in the rate base. It is always necessary, however, to analyze the specific assumptions and data upon

⁶⁷ *Brooklyn Borough Gas Co. v. Prendergast*, P.U.R. 1927A, 200, 235, 239, 16 F. (2d) 615 (E.D. N.Y., 1926); *Re Cincinnati & Bell Teleph. Co.*, P.U.R. 1924E, 849, 853 (Ohio, 1924); *Public Service Comm. v. Missouri Utilities Co.*, P.U.R. 1932E, 449, 483 (Mo., 1932); *Pacific Tel. & Tel. Co. v. Thomas*, 13 P.U.R. (N.S.) 337, 365 (Or. C.C., 1936); *Himes v. Pennsylvania Power & Light Co.*, 16 P.U.R. (N.S.) 65, 85 (Pa., 1936).

⁶⁸ *Re Chesapeake & P. Tel. Co.*, P.U.R. 1926E, 481, 549 (Va., 1926); *Re Pacific Teleph. & Tel. Co.*, P.U.R. 1930C, 481 (Cal., 1929); *Re Brooklyn Borough Gas Co.*, 21 P.U.R. (N.S.) 353 (N.Y., 1937).

⁶⁹ *Texas Midland R.*, 75 I.C.C. 1, 143-146 (1918).

the basis of which the allowance is made. Wide differences in the amount of the engineering expenses are encountered, even for substantially similar properties, differences which may be explained only in part by varying practices with respect to the direct assignment of such costs to particular parts of the work. As a general principle, engineering and supervision expense should be allowed only so far as the expenditures add value to the plant.

The procedures open to commissions in the determination of appropriate allowances for engineering are illustrated by the work of the Interstate Commerce Commission. The attempt to allocate the costs of engineering to particular pieces of property was early abandoned as an unnecessary refinement. The historical method, which the Commission finally adopted, based the allowance upon what engineering expenses had been incurred in the past. On the basis of a detailed analysis of the engineering costs of 121 construction projects of different types in different parts of the country, the Commission concluded that the normal expenses of engineering amounted to not less than 2, nor more than 5, per cent of the road accounts, exclusive of land and engineering; the mean was 3.5, and the average 3.6, per cent. On the basis of these studies, the valuation engineers of the Commission were instructed to allow between 2 and 5 per cent, depending upon the nature of the property being valued.⁷⁰

Most of the commissions have based the calculation of engineering upon the cost of the physical property other than land. They have tended to follow convention in making these allowances, devoting little attention to the considerations that would warrant a relatively larger or smaller allowance for the particular property. Their allowances have averaged substantially higher than those of the Interstate Commerce Commission, despite the fact that a relatively larger portion of the investment of local utilities is for equipment, where the engineering costs are incurred largely by the manufacturer and included in the purchase price of his product. The percentage allowances have ranged from 2 to 15 per cent, with a distinct clustering at 5 per cent.⁷¹

PROMOTION. Promotional activities of some character have normally been associated with the inauguration of all enterprises of any size. In the most general terms, the activities of the promoter center in the discovery of a business opportunity, its tentative testing from the standpoint of prospective costs and revenues, and the enlistment of the necessary support for its development. More specifically, the promoter will prepare the initial plan for the enterprise; direct the preliminary legal and technical studies to determine its practicality, probable costs, and prospective revenues; secure any requisite charters and franchises; present the program to banking interests to secure the financing of the project; organize the corporation and perhaps secure options, prepare contracts, and take steps for the construction of the prop-

⁷⁰ *Texas Midland R.*, 75 I.C.C. 1, 148-150 (1918).

⁷¹ *King's County Lighting Co. v. Prendergast*, 7 F. (2d) 192, P.U.R. 1925C, 705, 717-718 (E.D.N.Y., 1925); *Re Clarksburg Light & Heat Co.*, P.U.R. 1928B, 290, 311, 312 (W.Va., 1927); *Re Union Electric Co.*, P.U.R. 1928E, 396, 402 (Mont., 1928); *Public Service Comm. v. Missouri Utilities Co.*, P.U.R. 1932E, 449, 483 (Mo., 1932); *Re Cities Service Co.*, P.U.R. 1933A, 113, 158 (Kan., 1932); *Re Lone Star Gas Co.*, P.U.R. 1933C, 1, 27 (Okla., 1933); *Re Springfield Gas Co.*, 19 P.U.R. (N.S.) 1, 9 (Ohio, 1937).

erty. The work of promotion is not all done by the promoter himself; he will presumably find it necessary to employ the relatively expensive assistance of engineers, attorneys, accountants, and other specialists. The scope of the promoter's work may have been much less than would be indicated by the present magnitude of the enterprise; the original project was probably of much smaller dimensions than the present enterprise.

Although promotional expenses have been a considerable item in the financial development of many utilities, the propriety of their inclusion in reproduction cost estimates is quite unsettled. Although this item was first in the enumeration of overhead charges in the Court's discussion of the master's report in the *Des Moines Gas* case,⁷² no allowance seems to have been made in the *Denver Union Water* case,⁷³ or the *Galveston Electric* case,⁷⁴ in both of which reasonably full discussions of overheads occur. Certainly separate allowance for promotional expense is not essential, as is shown by the Court's refusal to disturb the Commission's rejection of the item as "too conjectural" in the *Los Angeles Gas and Electric* case.⁷⁵ Where commissions have included a separate sum for promotion, the allowances are typically 1 or 2 per cent of the cost of the physical property excluding land. In a majority of the cases coming before the courts and commissions, no specific allowance is made; and it has been said in justification for a refusal to include promotional costs—that the promoter obtained his reward in the form of profitable construction contracts, that the costs have been amortized from earnings, that no expenses have been shown, that no services of real value to the community were rendered, or that all costs were covered in fees paid to parent or associated companies.⁷⁶

ORGANIZATION COSTS. The organization costs include the expenses of launching the corporation. Specifically, these expenses embrace the incorporation fees, the necessary payments to attorneys, et cetera. There are frequent duplications of claims for promotion, organization, legal and financing costs, as well as for such intangibles as franchises, so that sometimes commissions group under the single classification of "organization and legal expenses" all those items that are here, for reasons of clarity, discussed under separate headings.

Having been accorded specific mention by the Supreme Court as an appropriate part of the reproduction-cost estimate,⁷⁷ organization expenses have generally been recognized by regulatory authorities. A specific allowance is to be preferred to the customary percentage allowance. Percentage allowances, based on the cost of physical properties other than lands, have ranged from a fraction to 1 per cent for organization expenses alone, and from 2 to 3 per cent for organization, administration and legal expenses in combina-

⁷² 238 U.S. 153, 166 (1915).

⁷⁴ 258 U.S. 388 (1922).

⁷⁶ *Denver Union Stock Yard Co. v. United States*, 57 F. (2d) 735, P.U.R. 1932C, 225, 233-234 (D. Colo., 1932); *Edwards v. Glen Teleph. Co.*, P.U.R. 1916B, 940, 959-960 (N.Y., 1915); *Re Chesapeake & P. Tel. Co.*, P.U.R. 1916C, 925, 988-994 (Md., 1916); *Re Hydro-Electric Light & P. Co.*, P.U.R. 1918A, 325, 333 (Ind., 1917); *Re Lone Star Gas Co.*, P.U.R. 1933C, 1, 27 (Okla., 1933).

⁷⁷ *Ohio Utilities Co. v. Comm.*, 267 U.S. 359, 362 (1925).

⁷³ 246 U.S. 178 (1918).

⁷⁵ 289 U.S. 287, 310 (1933).

tion.⁷⁸ Where no allowance is made the explanation is to be found in the fact that these costs are covered in other items, that the claims of the company have been extravagant, that the evidence does not make possible the determination of a reasonable figure, or that the costs to predecessor companies have been erroneously included.⁷⁹

LEGAL EXPENSES. The legal expenses incurred by utilities vary widely: the character of the construction, the state and federal laws controlling the operations of the corporation, and the length of the construction period are some of the factors influencing their amount. The occasions for legal expenses embrace the compliance with provisions of statutes and ordinances; litigation growing out of condemnation proceedings, damage suits and disputes over contracts; the preparation of contracts, deeds, and other legal instruments; and the examination of titles to real estate. The expenses associated with procuring franchises are ordinarily included directly in franchise costs.

Legal expenses were recognized as part of the overhead charges by implication in Supreme Court's opinion in the *Des Moines Gas* case.⁸⁰ And the propriety of their inclusion, in so far as they are part of the costs of the construction period, has been conceded in many commission proceedings. The claims for legal expenditures may overlap those for administration, organization, insurance and damages, et cetera. Consequently, commissions should avoid granting blanket allowances and should insist that the claims be capable of definite and certain determination, that, where possible, the specific costs (actual or estimate) be enumerated, and that claims based on mere speculation, conjecture, or comparison with other utilities be rejected. Some legal expenditures are clearly improper, such as the expenses of lobbying for favorable legislation; and other legitimate legal costs, such as the expenses of bond issues, preparing contracts, et cetera, should be amortized over the period during which the expenditure benefits the company.

The basis for the calculation of the allowance and its amount have varied considerably in different valuations. A specific allowance is usually preferable, but where a percentage allowance is made, the base is usually the cost of the physical property other than land.⁸¹ The percentage allowances cluster around 1 per cent as the norm, with larger percentages when legal expenses are grouped with other overheads. The Interstate Commerce Commission, for example, has included legal expenses as one item in the general expenditures, for which an allowance of 1½ per cent of the cost of physical structures other than land has been thought sufficient.⁸²

ADMINISTRATION EXPENSES. The allowance for administration is intended to include those expenses (other than the organization, legal, and others for

⁷⁸ *State ex rel. St. Louis v. Public Service Commission*, 341 Mo. 920, 110 S.W. (2d) 749, 22 P.U.R. (N.S.) 6, 24 (1937); *Re Western States Gas & E. Co.*, P.U.R. 1924D, 681, 691 (Cal., 1924); *Re Cities Service Co.*, P.U.R. 1933A, 113, 161 (Kan., 1932).

⁷⁹ *Re Southern Cal. Edison Co.*, P.U.R. 1924C, 1, 20 (Cal., 1923); *Re Long Island Lighting Co.*, 18 P.U.R. (N.S.) 65, 93-101 (N.Y., 1935); *Re Capital Transit Co.*, 25 P.U.R. (N.S.) 177, 193 (D.C., 1938).

⁸⁰ 238 U.S. 153, 166 (1915).

⁸¹ Since so large a proportion of the legal expenses of utility corporations is associated with the acquisition of land, the base for the allowance should probably include land values.

⁸² *Texas Midland R.*, 75 I.C.C. 1, 29-30, 151-153 (1918).

which allowance is made elsewhere) necessarily incurred prior to the beginning of operations. More specifically these expenses include the salaries of the executive and general office staffs, stationery and postage, office rent, and the like.

Some allowance for administration expenses is usually made directly or indirectly by the commissions. Again a specific, rather than a percentage, allowance is advisable. As a percentage, a fraction of 1 per cent is probably sufficient, or in combination with organization and legal expenses, 1 to 3 per cent may be considered normal.⁸³ The cost of physical property other than lands is the usual base for any percentage allowance.

GENERAL EXPENDITURES. The multiplication of the overhead allowances, especially with reference to those items which are relatively small, favors overstatement and duplication. Under the designation of "general expenditures" the Interstate Commerce Commission groups "organization expenses," "general officers and clerks," "law," "stationery and printing," "taxes," and "other expenditures—general." The Commission's allowance for these five classes of expense has been 1½ per cent of the investment in, or cost of, road items, exclusive of land.⁸⁴

INSURANCE AND DAMAGES. Every large construction project is certain to involve injuries to persons (usually employees), damages to property, and losses from fire or other accidents. The amount of the losses, or the costs of insurance, will vary with the type of the utility, the conditions and methods of construction, and the legal liabilities which are imposed on the company. The utility may choose not to purchase insurance, in which case it will carry the risk itself. Whichever course is pursued, no allowance for either insurance or damages should be made in excess of the standard premiums at which the company might have covered its risks. This rule has not always been observed by the regulatory commissions, and the allowances have varied from a reasonable fraction of 1 per cent, to questionable allowances of 2 per cent or more on the cost of the physical property other than land.⁸⁵ If the unit prices applicable to the physical property are based on the assumption that the work is done by a general contractor or if there is a separate allowance for general contractor's profit, there need be no separate allowance for insurance and damages to that extent. And so far as insurance is available at standard premiums for particular parts of the work, this expense may be allocated to the appropriate units or classes of construction work or property and thus removed from the category of overheads.

TAXES DURING CONSTRUCTION. No general rule can be enunciated as to the propriety of including taxes as an overhead expense. The logic of the

⁸³ *Water Protest Committee v. York Water Co.*, P.U.R. 1924C, 680, 696 (Pa., 1924); *Public Utilities Commission v. New England Teleph. & Teleg. Co.*, P.U.R. 1926C, 207, 230 (R.I., 1925); *Re Chesapeake & P. Tel. Co.*, P.U.R. 1926E, 481, 558-559 (Va., 1926); *Re Union Electric Light & P. Co.*, 17 P.U.R. (N.S.) 337, 372 (Mo., 1937); *Re Springfield Gas Co.*, 19 P.U.R. (N.S.) 1, 9 (Ohio, 1937); *Lone Star Gas Co. v. Fort Worth*, 20 P.U.R. (N.S.) 89, 106-108 (Tex., 1937).

⁸⁴ Where incorporation fees have been more than nominal in amount, an additional allowance is made. (*Texas Midland R.*, 75 I.C.C. 1, 29-30, 151-153 [1918].)

⁸⁵ *Public Utilities Commission v. New England Teleph. & Teleg. Co.*, P.U.R. 1926C, 207, 230 (R.I., 1925); *Re Union Electric Co.*, P.U.R. 1928E, 396, 401-402 (Mont., 1928); *Sullivan v. Mo. Elec. P. Co.*, 6 P.U.R. (N.S.) 225, 235-236 (Mo., 1934).

present-market-value rule of *The Minnesota Rate Cases* has been thought to preclude the allowance of this overhead on land; but nevertheless some commissions have included taxes on land in overheads.⁸⁶ The propriety of an allowance for taxes on other property is properly held to depend upon local laws and practices. Where the company's proof is satisfactory, the usual allowance is relatively insignificant, approximately 1 per cent in a typical case.

THE COSTS OF FINANCING. The costs of financing fall into three categories: the expenses incidental to preparing security issues, selecting trustees and fiduciary agents, engraving securities, et cetera; the discounts at which corporate securities are sold to the ultimate investors; and the commissions and fees that are paid to bankers and security houses for the underwriting and sale of securities. Under present methods of corporate financing these costs are commonly incurred in connection with any security issue of substantial amount. If these three classes of expenses are analyzed, it will be noted that certain items may be considered capital costs, while others may not be so regarded. (1) The expenses of the first group, in so far as the securities are issued permanently as in the case of stocks, may be capitalized; while to the extent that they are recurring, as with bond issues, these costs should be amortized during the life of the security. (2) The discount at which securities are sold to investors depends upon the amount and certainty of the prospective return; if the interest or dividend rate is high enough and if no untoward risks attach, the security may sell at par or even at a premium. The discount is therefore in the nature of a deferred interest charge in the case of bond issues, and for all securities it is an index of the relative attractiveness of the particular security in relation to others which investors might purchase. Under no normal circumstance should the discount on security issues be considered a capitalizable cost: the discount on bonds should be amortized during the life of the bond; and it would appear advisable to amortize stock discounts also, perhaps out of such surplus earnings as may be available. (3) Brokerage costs,⁸⁷ including the fees paid to underwriting syndicates and to others selling securities to the ultimate investor, represent payment for a service performed for the corporation. To the extent that such costs are of a recurring nature, they should be amortized out of income; to the extent that the service is a permanent one, as in the issue of stocks, it may be appropriate to capitalize the expenditure.

The treatment of financing costs in the determination of the rate base is one of the unsettled elements in utility valuations. Those who would exclude financing costs find support in the Supreme Court's limited discussions of

⁸⁶ *Re Utah Light & Traction Co.*, P.U.R. 1920B, 262, 275-276 (Utah, 1920); *Wood v. Elmira Water, Light & R. Co.*, P.U.R. 1927B, 400, 460 (N.Y., 1926); *Blytheville v. Blytheville Water Co.*, 15 P.U.R. (N.S.) 177, 188 (Ark., 1936).

⁸⁷ It is important to distinguish between discount and brokerage. If an issue of 5 per cent bonds can be sold to investors at \$97, the issue may be sold by the issuing corporation to the underwriting syndicate at \$95. The difference between the par value and the amount that the investors pay for the security (100-97), or 3 per cent, is the *discount*. The corporation has to pay \$5 a year for the use of \$97, and in addition, must pay \$3 more, or \$100, at the maturity of the bond; the \$3 is in the nature of a deferred interest charge. The *brokerage* is the "spread" that is available to the investment bankers and brokers who handle the sale of the security; that is, it is the difference between the price at which the security is sold to investors and the price which the investment bankers have paid to the corporation, that is, \$97 minus \$95, or \$2.

the matter, in which reluctance to require the inclusion of such items has been manifest.⁸⁸ The arguments against the inclusion of these costs seem to be ultimately reducible to the contention that if the company enjoyed good credit, it could obtain sufficient capital without other costs than the normal rate of return, and that to make any allowance for financing costs would penalize consumers for the inferior credit of the utility.⁸⁹

A quite substantial number of commissions, and some courts, have held that financing costs are a normal expense in the starting of any enterprise and should be recognized in utility valuations. Some commissions that have recognized this expense have based the allowance upon the cost of all property, the range of allowances being from less than 3 to 20 per cent.⁹⁰ Other commissions have preferred to recognize financing costs in the rate of return.⁹¹ The Interstate Commerce Commission has made allowance for financing costs only in so far as they apply to the construction period and then only in connection with interest during construction.⁹²

An appropriate rule for the treatment of financing costs, may follow the three categories into which these costs have been analyzed. The expenses incidental to preparing security issues, selecting trustees and fiduciary agents, engraving securities, et cetera, are a legitimate part of the cost of every security issue: to the extent that these costs are incurred for securities with a limited term (as bonds or notes) the costs should be amortized during the life of the security, except for that part which applies to the construction period, which may be capitalized; but in so far as the expenses apply to securities which will remain outstanding permanently, there is no principle that prevents their capitalization. Discount on securities of any character is in the nature of a hidden interest charge, and should never be included in the rate base unless assignable to the construction period. The fees and commissions paid to underwriting syndicates and bankers, sometimes loosely called "brokerage," should be amortized if applicable to bonds and notes (with the usual exception for that part of the expense which may be ascribed to the construction period), but may be capitalized if incurred on behalf of securities that remain outstanding indefinitely.

INTEREST DURING CONSTRUCTION. In the creation of any large utility undertaking, large expenditures are required for various periods of time before the enterprise begins operations. Expenses for construction and equipment must be met as the work proceeds, and the cost of providing the funds there-

⁸⁸ *Galveston Elec. Co. v. Galveston*, 258 U.S. 388, 397 (1922). See also *Los Angeles G. & E. Corp. v. Comm.*, 289 U.S. 287, 310 (1933); and *Dayton P. & L. Co. v. Comm.*, 292 U.S. 290, 310 (1934).

⁸⁹ *Reno P., L. & W. Co. v. Comm.*, 300 Fed. 645, 667 (D. Nev., 1921).

⁹⁰ *Re Southern Nebraska Power Co.*, P.U.R. 1925B, 278, 282-283 (Neb., 1924); *Columbia v. Columbia Water Co.*, P.U.R. 1929D, 265, 271 (Pa., 1929). See also *Worcester Electric Light Co. v. Attwill*, 23 F. (2d) 891, P.U.R. 1929B, 1, 59-61 (D. Mass., 1929).

⁹¹ *Herring v. Clark's Ferry Bridge Co.*, P.U.R. 1926D, 514, 523-524 (Pa., 1926); *Re Alabama Power Co.*, P.U.R. 1932D, 345, 359 (F.P.C., 1932); *Re General Water Supply Co.*, P.U.R. 1923B, 802, 804-805 (N.J., 1923); *Re Eastern Shore Gas & E. Co.*, P.U.R. 1929E, 244, 249 (Md., 1929); *Spiess v. Manchester Electric Co.*, P.U.R. 1933B, 262, 266-267 (Conn., 1933); *Re Union Electric Light & P. Co.*, 17 P.U.R. (N.S.) 337, 348-349 (Mo., 1937); *Re Northern States Power Co.*, 24 P.U.R. (N.S.) 474, 476-478 (Wis., 1938).

⁹² *Texas Midland R.*, 75 I.C.C. 1, 31 (1918).

fore is a generally recognized part of the costs of the final enterprise. The allowance for interest during the construction period is not an attempt to give the company an element of profit before actual operations begin, but is simply an acknowledgment of the fact that capital funds cannot be employed without the loss of the interest that might have been earned had they been otherwise invested.

The propriety of including interest during construction as an overhead has been affirmed by the Supreme Court.⁹³ State and federal commissions have quite generally provided for the charge in their determinations of reproduction cost and the rate base. Special circumstances have sometimes caused particular commissions to rule against the inclusion of interest during construction: no interest has been permitted on property that has been abandoned or is otherwise unused;⁹⁴ interest has been properly ruled out for property on which no such cost was incurred, as for meters and other equipment installed immediately preceding or following the beginning of operations;⁹⁵ where piecemeal construction is assumed, the necessary allowance has been greatly reduced;⁹⁶ and though it is not consistent with the strict theory of reproduction cost, several commissions have held that no interest during construction should be added where the funds for the construction were derived from depreciation reserves or other operating funds.⁹⁷ For the most part however, the differences of opinion respecting interest during construction are concerned with the appropriate amount of the allowance and its calculation, rather than with the validity of an allowance *per se*.

The amount of the allowance for interest during construction will depend upon the rate of interest assumed, the term for which it is allowed, and the base upon which it is calculated. These three considerations are quite generally resolved on the basis of general assumptions, the actual interest payments made by the utility not being considered controlling.

In determining the rate at which interest shall be calculated, it is customary to assume that the company's credit is good, for certainly the value of a property should not be enhanced by the relatively poor financial standing of its promoters. Since it is not the purpose of the allowance to provide the company with profits before operations are begun, the rate should be confined to the minimum cost necessary to command the funds requisite for construction. In the large majority of cases, the allowance has been 6 per cent. This percentage has the approval of the Interstate Commerce Commission in its valuations of the steam railroads, but it should be remarked that its allowance of 6 per cent has been intended to cover not only interest costs but also "all other costs in connection with procuring necessary funds for construction," specifically any costs of financing.

⁹³ *Ohio Utilities Co. v. Comm.*, 267 U.S. 359, 363 (1925).

⁹⁴ *Re Capital Traction Co.*, P.U.R. 1919F, 779, 810 (D.C., 1919); *Re N. Y. Tel. Co.*, P.U.R. 1925C, 767, 779 (N.J., 1924).

⁹⁵ *Re Missouri S. R. Co.*, P.U.R. 1916C, 607, 622 (Mo., 1915); *Re Racine Water Co.*, P.U.R. 1917D, 277, 314 (Wis., 1917).

⁹⁶ *Re United R. Co.*, P.U.R. 1923D, 759, 845 (Mo., 1923).

⁹⁷ *Re Consumers Co.*, P.U.R. 1923A, 418, 425-426 (Idaho, 1922); *Re Interstate Pub. Service Co.*, P.U.R. 1930E, 56, 58 (Ind., 1930).

There is no unanimity as to the term for which interest should be allowed, and there are possibilities of widely varying allowances arising from different assumptions as to the time required for construction. Theoretically, it would be possible to prepare a construction schedule for each particular property and to calculate the actual investments that would be required at successive stages in the progress of the work. Most commissions have declined to indulge in this theoretical calculation and have assumed that the funds required would be expended evenly over the entire construction period.⁹⁸ While it might be assumed that funds would be required only from the time of outlay to the beginning of operations, it is practically necessary to have funds on hand somewhat in advance of the particular dates on which the payments are to be made. The Interstate Commerce Commission assumed that such funds should be available approximately three months in advance of actual expenditure.⁹⁹

As to the length of the construction period, no exact standard is possible. Although it would perhaps be unfair to the utility to limit the construction period to the shortest possible space of time within which the work could be accomplished, neither the public nor the company will be injured if the construction period be limited to that time within which the work might be economically done. It may be noted that claims to unusually long construction periods based on possible delays in the completion of the work may represent the double counting of costs that have already been recognized in unit prices, contractors' profits, or contingencies and omissions. An occasional source of controversy has to do with the recognition of the preliminary period preceding the start of actual construction, since this period may be of long duration; however, the actual expenditures during this period are seldom of significant magnitude and no injustice results if the term be confined to the actual construction period.¹⁰⁰

The base for the determination of the interest allowance would appear to be obvious—all of the expenditures imposed on the utility during the construction of its plant. This definition of the base would include not only the expenditures for physical structures and land, but for overhead expenses as well. In actual practice, however, two exceptions are encountered: since compounding of the interest allowance is considered improper, interest during construction is eliminated from the base;¹⁰¹ and the *Minnesota Rate Cases* rule with respect to the valuation of land has been generally interpreted as directing that the investment in land should form no part of the base for the determination of interest during construction.¹⁰²

⁹⁸ While this assumption has been followed by the Interstate Commerce Commission as to expenditures on road account, the Commission has recognized that equipment is normally not acquired until the road is about to begin operations, and hence interest on equipment expenditures is limited to a period of three months. (*Texas Midland R.*, 75 I.C.C. 1, 158 [1918].) A similar distinction might be made by state commissions in respect to property, such as subscribers' telephone instruments, meters, et cetera, which is normally purchased during the period of actual operations.

⁹⁹ *Ibid.*, 157.

¹⁰⁰ *Ibid.*, 156.

¹⁰¹ *Ibid.*, 155; *Missouri, K. & T. Ry. Co.*, 34 Val. Rep. 293 (1930).

¹⁰² *St. Paul Bridge & Term. Ry. Co.*, 143 I.C.C. 375, 381 (1928); *Re Metropolitan West Side Elev. R. Co.*, P.U.R. 1921B, 229, 270 (Ill., 1921); *Re Duluth Sweet R. Co.*, P.U.R. 1927A, 41,

In conclusion, interest during construction is usually allowed at the rate of 6 per cent upon the cost of physical property (except land), plus overhead charges (except interest) for one-half of the period of actual construction (plus).

BLANKET ALLOWANCES FOR OVERHEADS. Overhead expenses may either find a place in the valuation in the form of the separate allowances which have already been described, or a single blanket percentage allowance may be made. If appropriate general percentages were worked out for different classes of construction with the same care that should apply to the calculation of the separate allowances, there would be no objection to the use of the blanket allowance. However, there has developed a tendency for commissions to rely upon the blanket percentages, both as a labor-saving device and because legal authorities can be cited for the particular percentages chosen. In a large preponderance of cases this method has been followed; and an allowance of 15 per cent of the cost of physical property (with or without the exclusion of lands) has been usual, although allowances of 10 per cent are not uncommon and those of more than 15 and up to 30 per cent are not unknown. The blanket percentage method has been recognized by the Supreme Court,¹⁰³ a fact which has doubtless added to its popularity with the state commissions. Such evidence as has been developed in the few cases where actual expenditures for overhead costs have been determined would seem to indicate that a blanket allowance of 15 per cent would normally be more than generous.

5. INTANGIBLE VALUES

It is customary for valuation cases to include allowances for intangible elements of value in addition to physical assets and overhead charges. As the term implies, these values are not associated with the utility's physical assets; rather, they are identified with various rights and privileges attaching to the business in its entirety. The discussion which follows will be limited to the more important intangibles; namely, franchises, goodwill, going value, contracts, and water rights.

FRANCHISE VALUE. *The character of franchises.* The general nature of franchises has been considered in some detail.¹⁰⁴ For present purposes, it is enough to note that franchises are property.¹⁰⁵ For the utility company, fran-

50-51 (Minn., 1926); *Public Service Commission v. Missouri Utilities Co.*, P.U.R. 1932E, 449, 483 (Mo., 1932).

Contra: *Wood v. Elmira Water, Light & R. Co.*, P.U.R. 1927B, 400, 460 (N.Y., 1926); *Comm. v. Ozark Utilities Co.*, 18 P.U.R. (N.S.) 408, 416 (Mo., 1937).

Of course, the adoption of the prudent-investment base, with land limited to its investment cost, would require the inclusion of expenditures for land in the base upon which interest during construction should be allowed. The Federal Power Commission, in its determination of the statutory "investment cost" for hydroelectric projects constructed under federal license, has so ruled. (*Re Alabama P. Co.*, P.U.R. 1932D, 345, 362-363 [F.P.C., 1932].)

¹⁰³ In the *Des Moines Gas* case, the Court accepted a valuation in which an allowance of 15 per cent had been made in addition to a separate sum for organization expenses (238 U.S. 153, 165-166 [1915]); and in the *Dayton Power and Light Company* case an allowance of 14 per cent was approved (292 U.S. 290, 311 [1934]).

¹⁰⁴ Chapter VII.

¹⁰⁵ *Monongahela Co. v. U.S.*, 148 U.S. 312, 329, 342-345 (1893); *People v. O'Brien*, 111 N.Y. 1 (1888).

chises are obviously valuable: without its franchise, the company would be unable to engage in its business. Thus, since the franchise is property, and valuable property, it is not strange that claims for the inclusion of franchise values have been prominent in rate proceedings.

The valuation of franchises. Before entering upon the considerations for and against the inclusion of franchise values in the rate base, seven methods of valuing franchises may be canvassed, and the propriety of each method for the purposes of rate regulation noted.

(1) The original cost of a franchise would be the cost paid by the original owner to the public authority that granted the franchise. In so far as the original cost, or investment, is considered an appropriate standard for the regulation of utility rates, the same measure may be applied to franchises.

(2) A prudent-investment standard for the valuation of franchises may be suggested if there is any reason to believe that the cost has been unduly inflated. If the company has spent large sums in litigation, in publicity campaigns to influence voters and elections, or in lobbying activities, the inclusion of such expenditures in the rate base should be challenged. The allowance for a franchise should be its necessary and legitimate cost, and any sums in excess of the actual payments to the issuing authorities should be excluded from consideration for rate-making purposes.

(3) Actual cost of the franchise to the present company may be a quite improper standard where the franchise has been transferred from the original holder to a successor corporation.¹⁰⁶

(4) The present replacement cost of the franchise is the sum which would necessarily be paid to the granting authorities if the franchise were to be obtained at the present time. This figure is seldom adopted; however, if the standard of value is the present cost of reproduction, present replacement cost is a consistent measure of franchise values.¹⁰⁷

(5) The valuation of a franchise as though it were a right in land has been proposed in at least one instance. The utility sought to appraise the area occupied in the public street according to the value of similar adjacent lands.¹⁰⁸ In another instance it was proposed that the value of the franchise be measured by the costs that would be imposed upon the utility if it were under the necessity of acquiring a private right-of-way.¹⁰⁹ The speculative character of any such estimate, as well as its irrelevance for the purposes of rate regulation, warrants its unqualified rejection.

(6) The value of a franchise may be obtained by capitalizing the earnings of the utility and subtracting therefrom the value of all other assets. Though this standard, the so-called "commercial value" of the franchise, has at times been the basis for the purchase or merger of utility properties, no value deriving from earnings has a legitimate place in the control of utility rates.

(7) The capitalized annual cost of the franchise, where the utility holds its franchise in return for the payment of an annual fee, has been proposed

¹⁰⁶ *Piercy v. Citizens' Gas, Electric & Heating Co.*, 5 Ann. Rep. Ill. P.U.C. 340 (1918); *Re Southern P. Co.*, 26 Cal. R.C.R. 682 (1925).

¹⁰⁷ *Re Cincinnati Gas & E. Co.*, P.U.R. 1916F, 416, 426-427 (Ohio, 1916).

¹⁰⁸ *Re Southern P. Co.* P.U.R. 1926A, 298, 303 (Or., 1925).

¹⁰⁹ *Pacific G. & E. Co. v. San Francisco*, 273 Fed. 937 (N.D. Cal., 1921).

as the value of the franchise. The measure is unacceptable, not only because it is logically unsound (such a measure might reflect the value of the franchise to the municipality), but also because it would constitute a duplicate charge on the consuming public, since the annual payment is normally included in the operating expenses of the utility.

As franchises are frequently the subject of taxation, the assessed value of the franchise for tax purposes has been proposed for inclusion in the rate base. Three objections to this proposal may be suggested. First, tax valuations are not usually scientifically prepared and should never be considered controlling for purposes of rate regulation. Secondly, the valuation of franchises for tax purposes usually fails to distinguish between franchise and other intangible values; also the tax appraisal is ordinarily founded upon the company's earnings. And thirdly, the tax payments are treated as a part of the operating expenses of the utility.

Franchise values and the rate base. Should franchise values have any place in the determination of the rates which utilities shall be permitted to charge? If this question is answered affirmatively, what principles shall determine the value of the franchise?

The arguments for the inclusion of franchise value in the rate base have proceeded largely on the assumption that all elements of property are entitled to earn a fair return. The analogy of rate regulation to condemnation, where the company's property in its franchise constitutes part of the required compensation, has been urged as a reason for recognizing franchise values for rate regulation.¹¹⁰ And it has also been argued that if franchise value were not included in the rate base, it would be possible to reduce rates to the point of confiscating this value, and thus, in effect, to abrogate the franchise despite the constitutional mandate against impairment of the obligations of contracts.¹¹¹ The taxation of franchises has been taken by some courts as evidence of the propriety of adding franchise values to the rate base, but the argument clearly lacks validity, for the tax payments are included in operating expenses.¹¹²

Impressive arguments are advanced against the inclusion of any allowance for franchise values in excess of the payments made therefor to the public authority granting the franchise. (1) The franchise, as a grant of important privileges to private individuals, is justifiable only on the assumption that comparable benefits will accrue to the community; to make any further allowance would be to charge the public for something that the public itself has contributed. (2) On grounds of equity, the utility's right to a return must rest upon investment, and where there has been no cost imposed on the company there exists no right to demand a return. (3) It may be observed that the franchise as a bare grant of authority confers on its owner no right to demand a return from the public. It is only when capital has been invested in accordance with the terms of the contract that any right to income arises, and that

¹¹⁰ *Consolidated Gas Co. v. New York*, 157 Fed. 849, 876-877 (C.C., S.D.N.Y., 1907).

¹¹¹ *Spring Valley Water Co. v. San Francisco*, 165 Fed. 667, 693-695 (C.C., N.D. Cal., 1908).

¹¹² It would be quite as logical to urge the capitalization of annual expenditures for fuel as a part of the rate base

right to income is measured by the investment. To count the investment in the property and the franchise is to allow twice for the same thing, for the franchise has no value apart from the enterprise itself.¹¹³ (4) The untenable character of the arguments for the inclusion of franchise values in the rate base is underlined when the measurement of franchise values is considered. Ultimately, the value of any franchise must rest upon the income which its possession makes possible; consequently, its inclusion in the rate base would nullify all regulation of price by lending an appearance of reasonableness to any rates, however excessive they might be. (5) Closely related to this last objection is the contention that the inclusion of franchise values based upon earnings would lead to a cumulative inflation of the franchise value and of the claims based thereon. Every allowance for franchise values would presumably increase the earnings which the company might demand, and each increase in earnings would cause a further increase in the value of the franchise.¹¹⁴ (6) Finally, it has been observed that a large part of the value which utility corporations attribute to their franchises arises from the absence of competition which these utilities enjoy. Values resting upon such insecure foundations are values in name only, and their recognition would, in many communities, lead to their termination.

Legal status of franchise values in rate regulation. While much confusion surrounded the proper treatment of franchise values in the early rate cases, the present status of franchise values is reasonably clear. The early difficulties are traceable to the Supreme Court's decision in *Willcox v. Consolidated Gas Company*,¹¹⁵ in which the Court, for reasons peculiar to that case, permitted the inclusion of franchises at \$7,781,000. Even this recognition of franchise values was accompanied by a warning that the decision could "form no precedent in regard to the valuation of franchises generally."¹¹⁶

Many conflicting interpretations followed the Court's opinion in the *Willcox* case. Finally, in 1923, in the *Georgia Railway and Power Company* case, the Supreme Court definitely ruled against the inclusion of franchise values in the rate base.¹¹⁷

¹¹³ See *Consolidated Gas Co. v. New York*, 157 Fed. 849, 874 (C.C., S.D.N.Y., 1907).

¹¹⁴ *Public Service Gas Co. v. Board of Public Utility Commissioners*, 87 N.J.L. 581, 602-603 94 Atl. 634, 636 (1915).

¹¹⁵ 212 U.S. 19, 43-48 (1909). See Chapter XI.

¹¹⁶ *Willcox v. Consolidated Gas Co.*, 212 U.S. 19, 44-46 (1909).

¹¹⁷ "Two objections to the valuation relate to the exclusion of items from the rate base, namely: the franchise to do business in Atlanta, said to be worth \$1,000,000, and so-called losses from operations during recent years, alleged to aggregate \$1,000,000. These items were properly excluded. The franchise in question is not a monopoly. It is merely a perpetual permit, granted by the legislature in 1856, to maintain gas mains in the streets, alleys, and public places of Atlanta without the necessity of securing the consent of the municipality. That such franchises are to be excluded in fixing the rate base was settled by *Cedar Rapids Gas Light Co. v. Cedar Rapids*, 223 U.S. 655, 669; *Des Moines Gas Co. v. Des Moines*, 238 U.S. 153, 169, and *Galveston Electric Co. v. Galveston*, 258 U.S. 388. The allowance for the franchise made in *Willcox v. Consolidated Gas Co.*, 212 U.S. 19, 43, 44, 48, was rested on special grounds which do not exist in this case." (*Ga. Ry. & P. Co. v. Comm.*, 262 U.S. 625, 632 [1923].)

Theoretically, the phrasing of Mr. Justice Brandeis's opinion leaves open the question of the treatment of franchises which confer a monopoly on the utility, but practically, there is no reason to anticipate any different treatment of such exclusive grants.

The citations in the above excerpt are slightly ambiguous, for in the *Cedar Rapids Gas*, the *Des Moines Gas*, and the *Galveston Electric* cases franchises are not explicitly discussed. The exclusions

What is the policy which regulatory authorities should observe with respect to franchises and their values? Franchises may find a place in the rate base only where the utility has incurred some cost to obtain the privileges. The amount at which the franchise may be included must be limited to the sum which the utility has paid to the governmental agency that issued the franchise, plus the reasonable attorneys' fees and other incidental costs (unless these are included in the overheads as a part of the legal expenses). Where the consideration for a franchise consists in annual fees, taxes, or free services, the sum of these costs should be included in operating expenses and no allowance for franchise value should appear in the rate base. Most commissions appear to follow these principles.

GOODWILL. Goodwill has been defined as "that element of value which inheres in the fixed and favorable consideration of customers, arising from an established and well-known and well-conducted business."¹¹⁸ Goodwill is evidenced by the superior earning capacity of a business in comparison with its competitors. It is the result of the voluntary patronage of buyers who are free to take their custom to competing firms. It is the product of the successful enterprise in a field of free competition. Goodwill is not to be confused with monopoly value, which arises from the superior earning capacity of a business because there is no other seller to whom purchasers can resort. Monopoly value is often associated with excessive prices and other devices by which patrons are given less, rather than more, for their money. A quite different situation prevails where the competitive business enjoys an appreciable element of goodwill: here the goodwill is evidence of advantages to consumers in the form of low prices, superior quality, and good service.¹¹⁹

Two considerations have led the Supreme Court to bar goodwill as an element of value in the regulation of utility rates: (1) The usual utility possesses a monopoly in supplying its service in a particular community; consumers have no choice but to pay the price demanded or forego the use of the service. Under such circumstances, continued patronage is no evidence of satisfaction with either the price or the quality of the service.¹²⁰ (2) Furthermore, goodwill is inescapably dependent upon the earnings of the company, so that there is no possibility of its measurement except with reference to those earnings.

were goodwill and going-concern value. The decision in the *Georgia Railway* case is, however, perfectly clear.

¹¹⁸ *Des Moines Gas Co. v. Des Moines*, 238 U.S. 153, 165 (1915).

¹¹⁹ *Hill v. Antigo Water Co.*, 3 Wis. R.C.R. 623, 720-721 (1909).

¹²⁰ *Willcox v. Consolidated Gas Co.*, 212 U.S. 19, 52 (1909); *Cedar Rapids Gas Light Co. v. Cedar Rapids*, 223 U.S. 655, 669-670 (1912); *Des Moines Gas Co. v. Des Moines*, 238 U.S. 153, 164 (1915).

This objection has been colorfully phrased by Judge Hough in the *Consolidated Gas Company* case:

"Finally, this claim of good will seems to forget that for many years the price and distribution of complainant's gas has been regulated by law. A citizen is entitled to have a clean street before his house because he pays taxes, inter alia, for that purpose. He is much more plainly entitled to have complainant's gas in his house because the company must give it to him if he pays for it. I think it apparent that the conceivable good will of a gas company in this city is about equal to that of the street cleaning department of the municipal government." (157 Fed. 849, 871 [C.C., S.D.N.Y., 1907].)

GOING VALUE.¹²¹ *The nature of going value.* Going value may conveniently be regarded as that added increment of value by which a going concern, with established business connections, operating routines, and revenues, exceeds (or may exceed) the value of one with an equivalent physical plant but which has yet to begin its operations. In an early rate case, the Supreme Court stated that going value was "the added value of the plant as a whole over the sum of the values of its component parts, which is attached to it because it is in active and successful operation and earning a return,"¹²² and this definition has been used in subsequent decisions.

Going value is frequently confused with goodwill and with franchise values, and the two latter are confused with each other. The confusion of going value and franchise value involves a failure to exclude the elements of monopoly value associated with franchises, whether or not exclusive, from a value that is identified only with efficiency in operation and success in earning a satisfactory profit. The confusion of goodwill and franchise value arises from an illogical attempt to associate an element of monopoly value, due to the possession of a franchise, with a type of value that can arise only under conditions of free competition. The confusion of goodwill and going value is likely to arise from attempts to associate the latter with earning capacity.¹²³

The components of going value. Much of the confusion that has characterized the discussion of going value arises from a lack of agreement as to whether going value relates to elements of "value" or to elements of "cost."

If going value is concerned with "values," there is simple common sense in the observation by the Supreme Court, "That there is an element of value in an assembled and established plant, doing business and earning money, over one not thus advanced, is self-evident."¹²⁴ Certainly an established and successful plant would have a greater value to a prospective purchaser than either an unsuccessful enterprise or an untried and unproved undertaking. But this value would be a function of earnings; it would be commercial value. And clearly, any value, whether it be termed "going value" or something equally euphonious, which is derived from the earnings of the enterprise, must be quite unacceptable in determining the rate base. In utility regulation, going value is not, and cannot be, "value."

Going value, like the other elements of "value" which constitute the base for prescribing utility charges, must relate to elements of "cost." Only to the extent that costs have been imposed on the utility corporation is it entitled to collect revenues from its patrons. Analysis of going value reveals that costs relating to the establishment of the business may adhere to the physical property, the personnel, or the patronage of the utility; and in consequence of these expenditures, the enterprise has presumably attained facility in its operations and an output commensurate with its capacity. Thus during the period of early operations, there will be a measure of experimentation

¹²¹ This material first appeared in an extended form as "Shall Going Value Be Included in the Rate-Base?" 16 *Journal of Land & Public Utility Economics* 286-293, 430-437 (Aug. and Nov., 1940).

¹²² *Knoxville v. Knoxville Water Co.*, 212 U.S. 1, 9 (1909).

¹²³ See *Re Indianapolis Water Company*, P.U.R. 1923D, 449, 494 (1923).

¹²⁴ *Des Moines Gas Co. v. Des Moines*, 238 U.S. 153, 165 (1915).

and adaptation before the most efficient operation of the physical plant is obtained; the "breaking in" of the physical plant may even be accompanied by some replacement and relocation of parts and other changes of significant proportions. The personnel of the business must be hired, employees must be trained, operating routines must be developed, the orderly preparation of accounting and other business records must be assured, et cetera. The development of patronage requires the expenditure of both time and money: prospective customers must be canvassed, advertising and free demonstrations are needed to educate consumers, the sale of necessary equipment to patrons must be stimulated through reductions in price, free installations, and the extension of credit, and finally, connections must be made with the customer's premises and meters must be installed.

The attainment of capacity output is essential to the achievement of low unit costs. Inadequate income in the early period of operations is commonplace, due largely to the necessity of building a plant of larger capacity than is required for immediate needs in order that the prospective demand may be served economically. The deficiencies in earnings during this initial period are sometimes regarded as the "cost" of developing the business, analogous to the cost of the physical plant, except that this "cost" is incurred after operations have begun.

Measures of going value. The measurement of going value has been one of the unsolved problems of utility valuation. Of the methods proposed and utilized in its measurement, five require description and analysis.

(1) The development-cost method. Development cost may be calculated either by a historical-cost method or by the so-called Wisconsin formula.

Development cost, if measured by historical cost, is determined from the accounting records of the utility. The nature of these costs has already been analyzed; they are associated with breaking in the physical plant and training the personnel, and the deficits incurred during the development of the property. In amount, these costs have been said to average from 10 to 20 per cent, exceeding 30 per cent in a substantial proportion of cases, and in some instances equaling 50 per cent, of the cost of physical property. The magnitude of such costs will be influenced by the amount and proportion of fixed costs, being relatively larger for railroads than for other utilities, by the length of the development period, and by the character of the territory served.

Numerous objections have been advanced to the use of the historical-cost method as a measure of going value for purposes of rate regulation. The historical cost is not capable of definite determination where the records of the corporation are incomplete or inadequate. Some of the elements of cost, such as those of the administrative staff, may already have been included among overhead costs. In the absence of explicit standards of managerial efficiency, it is not possible to determine to what extent deficiencies in early revenues were due to unavoidable delays in the development of profitable patronage and to what extent these deficits reflect inefficient or incompetent management. As the magnitude of the costs depends upon the length of the development period, and since there are no objective criteria for determining its proper length, it may be expected that the less successful utility—the one

launched without a sufficient public demand for the service, or the one whose costs were exaggerated—will be given a greater going value than another which is immediately successful, a result quite contrary to common sense and sound public policy.

The so-called Wisconsin method (now long abandoned) was one widely known example of the development-cost principle. This method proceeded on the basis of a formula whereby the deficiencies in income below the fair return in any year were added to the rate base for the following year. This formula may be expressed as follows:

$$\begin{aligned}
 &\text{If, rate base at the beginning of the year is } \dots B_1 \\
 &\text{Cost of extensions during the year } \dots \dots \dots b \\
 &\text{Operating expenses during the year (in-} \\
 &\quad \text{cluding depreciation) } \dots \dots \dots O \\
 &\text{Fair return upon } B_1 \text{ plus } \frac{b}{2} \dots \dots \dots R \\
 &\text{Earnings for the year } \dots \dots \dots E,
 \end{aligned}$$

Then the rate base for the following year (B_2) consists of the sum ($B_1 + b + O + R$) minus E . The going value continues to accumulate until the earnings (E) equal or exceed the operating expenses (O) plus the fair return (R).¹²⁵

Is the procedure developed by the early Wisconsin Railroad Commission a satisfactory method for the measurement of the going value for rate-making purposes?¹²⁶ Like the historical cost, the Wisconsin formula results in an exaggerated estimate of going value when the early period of inadequate

¹²⁵ With a slight variation, this calculation is illustrated by the Wisconsin Railroad Commission's calculation in *Re Manitowoc Water Works Co.*, 7 Wis. R.C.R. 71, 103 (1911).

EARNING VALUE COMPUTATION

Year	Cost at beginning of year	Additions during year	Deprecia- tion 1%	Interest and profit 7%	Total foregoing	Net earnings	Value at close of year
1898	210,000	8,034	1,944	14,981	234,959	12,794	222,165
1899	222,165	2,705	1,997	15,646	242,513	20,326	222,187
1900	222,187	3,007	2,026	15,658	242,878	16,610	226,268
1901	226,268	937	2,046	15,872	245,123	19,264	225,859
1902	225,859	1,829	2,509	15,874	245,621	19,486	226,135
1903	226,135	3,862	2,088	15,965	248,050	18,297	229,753
1904	229,753	3,163	2,123	16,193	251,231	19,723	231,508
1905	231,508	2,622	2,152	16,297	252,579	23,390	229,189
1906	229,189	3,648	2,183	16,171	251,191	22,105	229,086
1907	229,086	5,163	1,227	16,217	252,693	20,929	231,764
1908	231,764	8,391	2,295	16,517	258,967	24,649	234,318
1909	234,318	3,773	2,356	16,534	256,981	24,504	232,477
1910	232,477	5,138	2,401	16,453	256,469	29,135	227,334

¹²⁶ It has been noted that the formula results in an overcharge of consumers if interest is allowed on accruing depreciation unless there is also proper deduction for the previously accrued depreciation. The validity of this criticism was recognized by the Commission, and depreciation was thereafter included in costs only when the rate base was present value rather than the cost new. (*Janesville v. Janesville Water Co.*, 7 Wis. R.C.R. 628, 642 [1911].)

earnings is prolonged, thus providing a possible guarantee of earnings despite inefficiencies and extravagances in management. The reasonable application of the formula thus depends upon sound judgment in delimiting the development period and avoiding excessive allowances.

The development-cost method has not been approved by the Supreme Court. In the *Galveston Electric Company* case, Mr. Justice Brandeis ruled flatly against the inclusion of development cost in the base value for the purpose of determining whether a rate is confiscatory:

"The fact that a utility may reach financial success only in time or not at all, is a reason for allowing a liberal return on the money invested in the enterprise; but it does not make past losses an element to be considered in deciding what the base value is and whether the rate is confiscatory. . . .

"Nor is there evidence in the record to justify the master's finding that a business brought to successful operation 'should have a going concern value at least equal to one-third of its physical properties.' Past losses obviously do not tend to prove present values."¹²⁷ Similarly, Mr. Justice McReynolds, in indicating what the Court regarded as the minimum fair value in the *Southwestern Bell Telephone Company* case, specifically excluded the cost of establishing the business.¹²⁸

(2) The comparative-plant method is a contribution of the engineers.¹²⁹ Going value is determined by a comparison of the net earnings of an existing plant with the net earnings of a hypothetical "comparative plant." The "comparative plant" is assumed to be built and ready to begin operations on the date of valuation, and under noncompetitive conditions to acquire as rapidly as possible a business equivalent to that of the existing plant. The excess in the annual net earnings of the extant plant, as compared with the net earnings of the "comparative plant," for each year during this period is discounted to the present; and the sum of these discounted values is said to measure the value of the "created income," or going value, of the existing plant. It is described as the amount which a purchaser could afford to pay for the existing property with its established income, beyond the value of the bare physical property.

Two faults in the comparative-plant method have been fatal to its adoption by regulatory authorities. First, the method involves too many predictions and estimates resting on the unverifiable judgment of the valuation engineer: the probable future earnings of the extant plant, and the rate at which the comparative plant will increase its earnings; these judgments must rest in turn upon other estimates—the conditions of business, the rate of population growth, the trend of operating expenses, et cetera. Secondly, the amount of going value that will result from the comparative-plant method depends directly upon the present and prospective earnings of the existing plant—an indefensible relation when the purpose of the valuation is the establishment of reasonable rates for the existing plant.

(3) The reproduction-cost method of measuring going value may express

¹²⁷ 258 U.S. 388, 395-396 (1922).

¹²⁸ 262 U.S. 276, 288 (1923).

¹²⁹ "The Going Value of Water-Works," by Metcalf and Alvord, 73 *Am. Soc. C. E. Transactions* 326-391 (1911).

the proper allowance as a specific sum per customer or other unit, or as a percentage.¹³⁰ For going value, as for other elements of reproduction cost, reliance is placed largely on estimates—estimates of the cost of training personnel, attaching the existing volume of business, and carrying the excess plant during the initial period. The reproduction-cost method has fared no better than other measures of going value in meeting the legal hurdles.¹³¹

(4) The determination of going value on the basis of expert testimony has even less to recommend it than the methods already considered. The expert testimony may seek to show going value as value, that is, the sum which the attained facility in operation and the volume of patronage would be worth to a prospective purchaser—a quantum unacceptable for rate-making purposes—or it may seek to develop the historical or reproduction cost of creating the existing patronage and operating organization. While commissions and lower courts have sometimes been willing to make findings of going value on the basis of such evidence, the Supreme Court, when the question was squarely presented to it, considered such testimony “too conjectural” to serve as a basis for testing whether prescribed rates were confiscatory.¹³²

(5) It has been proposed that going value be measured by a capitalization of the initial risk, as indicated by the difference in the rate of return required to induce investors to purchase the securities of a new, rather than of an established, enterprise.¹³³ This method may be illustrated by assuming two similar plants each costing \$1,000,000; if the established plant is able to sell its stock on a 6 per cent basis, it may be that the new plant will find it impossible to sell its securities on less than a $7\frac{1}{2}$ per cent basis. The difference in the initial risk as appraised by investors is $1\frac{1}{2}$ per cent, or an annual return of \$15,000, which, capitalized at $7\frac{1}{2}$ per cent, yields a going value of \$200,000.

This method has not been adopted by regulatory authorities, and indeed, it would appear to be quite unsuited to rate regulation. The differences in the yields on the securities of the two corporations, assuming that the companies are otherwise comparable, may reflect a number of factors other than the fact that one is just beginning operations while the other is well established. Furthermore, this measure makes going value directly dependent upon earnings.

From this too-brief survey of the various methods for the measurement of going value, it appears that each of the methods frequently presented for the consideration of commissions and courts is beset by critical weaknesses. There is no method of measuring going value that has been accepted as valid by the judiciary, and consequently public service commissions have felt free to reject the results derived from each method.

The economic and legal status of going value in rate cases. Certain warn-

¹³⁰ As examples of the former may be mentioned \$20 per customer for trucking, *Re Rates on Milk Transportation*, P.U.R. 1933C, 194, 197-198 (Md., 1933); 2 per cent, plus \$5 per station, *Re Chesapeake & P. Tel. Co.*, P.U.R. 1916C, 925 (Md., 1916); \$6 per station, *Re Albemarle Tel. Co.*, P.U.R. 1922A, 756 (Va., 1921). Percentage allowances are customarily made, the majority of the allowances falling between 5 and 10 per cent.

¹³¹ *St. Joseph Stock Yards Co. v. U.S.*, 298 U.S. 38, 62-63 (1936).

¹³² *Los Angeles G. & E. Co. v. Comm.*, 289 U.S. 287, 317-319 (1933).

¹³³ Nash, *The Economics of Public Utilities*, pp. 171-172.

ings should precede any discussion of the position of going value in the rate base. It must be noted that while the commissions may consider the question largely on an economic basis (at least such should be the basis for their consideration), the courts are concerned only with the question of confiscation. It is essential to distinguish between going value for purposes of condemnation or purchase, where earnings may enter into the calculation, and going value as a part of the base for the regulation of rates.¹³⁴ Also, it must be recognized that the question of the appropriate allowance for going value is intimately bound up with the problems of evidence—what measures of going value are acceptable to commissions and courts? Finally, of fundamental concern with respect to the status of going value is the answer to the question whether going value is to be independently recognized and given a separate allowance or whether going value is inherent in the physical property and hence adequately recognized in the valuation of that property.

Commission practice with respect to going value has been largely influenced by considerations of legal expediency. A desire to avoid criticism by the courts, rather than conviction, has led a majority of commissions to make separate allowances for going value, in addition to valuing the physical properties as parts of a going concern. The allowance of a conventional percentage—10 per cent has been the vogue, with occasional allowances of less than 5, or more than 20, per cent—has avoided the intricacies of resolving each case on its own facts; indeed, so well established is the practice of making an allowance that there have been instances of separate allowances without sufficient testimony to establish the existence of any such element of value or cost.¹³⁵

Assuming it to be free to adopt whatever policy seems economically sound in its treatment of going value, what are the alternatives among which the commission may choose? The commission's immediate responsibility is the maintenance of the financial health of the utility, at least if that is possible without prejudice to the rights of consumers; its ultimate responsibility is the assurance of satisfactory service and reasonable rates, not only in the present, but for the future as well. Four alternatives are presumably open to the commission: (1) it may simply value the assets of the corporation as part of the integrated property of an established and going concern, without any separate or specific allowance for going value; (2) the costs involved in the creation of an efficient operating organization and the attraction of patronage may be recognized as proper charges to capital and permanently included in the rate base; (3) the costs properly associated with going value may be amortized subsequent to the development period from earnings in excess of those that would otherwise be considered a fair return; or (4) a rate of return may be established which is commensurate with the risks confronting utility investments, including the risk of an inadequate return in the development period. Each of these alternatives may be analyzed briefly.

¹³⁴ *Omaha v. Omaha Water Co.*, 218 U.S. 180, 202-203 (1910); *Galveston Elec. Co. v. Galveston*, 258 U.S. 388, 397 (1922).

¹³⁵ A tabulation of early commission allowances may be found in *Re Mountain States Tel. & Tel. Co.*, P.U.R. 1923B, 352, 366-367 (N.M., 1923), and *Re Indianapolis Water Co.*, P.U.R. 1923D, 449, 502-503 (Ind., 1923).

(1) In determining the rate base, commissions have always valued the separate physical assets of the utility as parts of an established and going enterprise. If going value be considered as an inherent characteristic of the going business, rather than as something separate from, and in addition to, the physical assets of that business, this method of recognizing going value appears logical. In its valuation work, the Interstate Commerce Commission has consistently declined to make any separate allowance for going value, holding that sufficient recognition was afforded this element "in the method of valuation employed"; that is, the physical assets were valued as parts of the property of an established and operating railroad.¹³⁶

(2) The separate allowance for going value as an addition to the value of the physical assets is the method which accords with the wishes of the utility industry. This is the method which has been followed by a majority of the commissions, without, however, any assurance that their allowances were closely related to the actual or reasonable costs of development for the particular utility whose rates were being regulated. If this method should be adopted, it would be advisable to limit the allowance for going value to the proved historical cost of developing the business, and there should be some assurance that there would be no capitalization of costs previously charged to operating expenses and paid by consumers. Also, the utility should be required to establish indubitably that the costs claimed for the development period reflect the maximum obtainable efficiency in management.

Despite the fact that the majority of commissions have chosen to recognize going value, or development costs, in this way, it may be asserted that this alternative is the least defensible of the four. The disadvantages inherent in this method are not confined to the possibilities that consumers may be asked to provide a return upon expenditures which they have already paid. There is also the certainty that the book value of the utility assets, and often the par value of outstanding securities as well, will be excessive in relation to the investment in real earning assets. The credit of the utility would be improved, except in so far as the recognition of going value may give the company an apparent legal right to the exaction of larger charges from consumers, by adherence to more conservative standards of accounting and finance. Moreover, many of the costs that are sometimes included among the development expenses are recurrent in their nature, and the charging of such costs to capital account, especially if the development period be extended, will cause further inflation of capitalization.

(3) Amortization of development costs or early losses out of subsequent earnings is the method followed by unregulated enterprises. Indeed, it is the common corporate practice to avoid charging such expenditures to capital account even temporarily; the larger returns that are sometimes realized if the corporation is successful are considered a sufficient compensation for the risks of inadequate earnings in the development period. The same policy is available to utility corporations if regulation is not so strict that earnings in

¹³⁶ In thus appraising the property of the railroads, the Commission contended that it had complied with the precedents established by the Supreme Court. (*Texas Midland R.*, 75 I.C.C. 1, 69-71 [1918]; *San Pedro, Los Angeles & Salt Lake R. Co.*, 75 I.C.C. 463, 510-512 [1923].)

excess of a fair return are never realized. Indeed, most successful utilities have probably found opportunity to pay dividends sufficient to offset any inadequacies in early earnings; but if not, there would certainly be no objection to a deliberate policy of permitting somewhat more than a fair return until any early deficiencies have been compensated for. The policy of amortization of development costs could presumably avoid imposing upon subsequent consumers rates higher than would otherwise be authorized, though it might mean the postponement of maximum reductions when liberal earnings appear. A further advantage of an amortization program would be the preservation of a more conservative relation between the investment in earning assets and the capitalization of the corporation.¹³⁷ Though amortization is to be preferred to a separate and additional allowance in the rate base, it is less satisfactory than the next method to be considered.

(4) The allowance of a rate of return commensurate with the risks encountered by the utility, including the risk of low earnings in the development period, is the most appropriate means of compensating for those elements of cost which lend support to the claims for going value. The peculiar propriety of this method of treating going value cannot be fully appreciated without considering the determination of the rate of return. The rate of return is presumably so fixed as to permit the utility to earn a return "equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties."¹³⁸ One of the normal risks of business undertakings is the possibility of inadequate earnings in the early years of the enterprise. As it is impossible to segregate this risk from others that influence the investment standing of utility's securities, it is always provided for in the rate of return. And to make allowance twice for the same elements of cost, in the rate base and in the rate of return, is to indulge in double charging at the expense of the consumer. Thus, a larger rate of return should be (in fact, *is*) permitted as long as these risks are present; and when the risks disappear, the rate of return should be reduced. The disappearance of these risks will be evidenced by the smaller yields at which the utility's securities are sold. The conclusion is, therefore, that going value has no place in the rate base of a utility; it is correctly cared for in the rate of return.

The sound policy for the commission to follow with respect to going value and the elements of costs associated therewith may be recapitulated as follows. The property of the utility should be valued as part of an established and successful going establishment, when such is the fact; but there should be no separate allowance for going value in addition to the valuation assigned to the physical assets and overhead charges. Since development costs have presumably been charged to operating expenses, and since any resulting inadequacy in earnings is recognized in the rate of return, no separate allowance for going value in the rate base is either necessary or proper.

¹³⁷ It would, of course, be possible to include going value in the rate base without permitting the issuance of securities thereon; indeed, if going value be incorporated in the rate base it is quite desirable that it should not be the occasion for the issue of additional securities.

¹³⁸ *Bluefield W. & Imp. Co. v. W. Va.*, 262 U.S. 679, 692 (1923).

The Supreme Court's attitude toward going value. The pattern of Supreme Court decisions with respect to going-concern value and rate regulation is not free from inconsistencies, for the thought on the subject, as well as the personnel of the Court, has changed. The guiding principles are, however, reasonably clear and explicit.

The existence of going value has long been recognized by the Supreme Court in its review of utility valuations. In its most frequently quoted opinion, *Des Moines Gas Company v. Des Moines*, Mr. Justice Day stated:

"... That there is an element of value in an assembled and established plant, doing business and earning money, over one not thus advanced, is self-evident. This element of value is a property right, and should be considered in determining the value of the property, upon which the owner has a right to make a fair return when the same is privately owned although dedicated to public use."¹³⁹ The precise significance of this statement is not immediately apparent. Although frequently quoted in support of a separate allowance for going value in addition to the appraisal of physical property and overhead costs, the fact is that in the *Des Moines* case the Court did not require a separate and additional allowance for going value.¹⁴⁰ This recognition of going value may be interpreted, with due regard to the logic of the other decisions of the Supreme Court, as requiring only that the commission "determine the value of the property . . . as that of an integrated, operating enterprise," and as holding that no further or additional sum for going value is necessary when the commission has valued the physical assets as parts of a going property with business attached and has made due allowance for overhead charges.¹⁴¹

There have been a number of decisions in which the Supreme Court has approved rate bases including separate allowances for going value. In the *Denver Water Company* case, the Court noted that the master, although finding a going value of \$800,000, had included no allowance therefor in his rate base, despite the fact that he had expressly declared that the valuation of the physical property included no increment because the property constituted an assembled and established plant; and it ruled that the exclusion was erroneous.¹⁴² In the next year, the Court criticized the reduction of an allowance for going value, the reduction having been based on the theory that the business had been developed at the public's expense, although there had been no finding that the past earnings of the company had been excessive.¹⁴³ In 1923, two cases came before the Supreme Court in which the commissions had allowed an item of 10 per cent for going value; this fact was noted by the Court, but

¹³⁹ 238 U.S. 153, 165 (1915). See also *Knoxville v. Knoxville Water Co.*, 212 U.S. 1, 9 (1909); *Denver v. Denver Union Water Co.*, 246 U.S. 178, 191-192 (1918); *McCardle v. Indianapolis Water Co.*, 272 U.S. 400, 414-415 (1926).

¹⁴⁰ "... When, as here, a long established and successful plant of this character is valued for rate-making purposes, and the value of the property fixed as the Master certifies upon the basis of a plant in successful operation, and overhead charges have been allowed for the items and in the sums already stated, it cannot be said, in view of the facts in this case, that the element of going value has not been given the consideration it deserves and the appellant's contention in this behalf is not sustained." (*Ibid.*, 171.)

¹⁴¹ *Los Angeles G. & E. Corp. v. Comm.*, 289 U.S. 287, 314 (1933).

¹⁴² 246 U.S. 178, 185-186, 191-192 (1918).

¹⁴³ *Lincoln G. & E. Co. v. Lincoln*, 250 U.S. 256, 267 (1919).

in neither instance was there any indication that that allowance was in any way essential.¹⁴⁴ In *McCardle v. Indianapolis Water Company*, Mr. Justice Butler, speaking for the Court, held that the Commission had erred in its allowance for going value: in an earlier proceeding involving the same property, the Commission had included the sum of \$1,416,000, amounting to 9.5 per cent of the value of the physical property, for water rights and going value; in the instant proceeding, the Commission, without any explanation, allowed only \$980,000 for working capital, water rights, and going value. The Court ruled that there was ample evidence to support the earlier allowance of 9.5 per cent.¹⁴⁵ These are the only cases in which the necessity for a separate and additional allowance for going value is implied, and in only two instances did the Court affirmatively require that a separate allowance be made.

In the majority of cases, the attempt of the utility to prove the existence and the amount of going value has been checked by the Court's objections to the valuation methods employed. No general formula for the determination of going value has received the approval of the Court; each claim for going value has been decided on its own facts.¹⁴⁶ The perfunctory reading of going value into every balance sheet has been unequivocally condemned.¹⁴⁷ In principle, goodwill has been consistently distinguished from going value and excluded from the rate base, but the practical difficulties in separating going value from goodwill have constituted an additional hazard to securing judicial approval of any measure of going value.¹⁴⁸ Past prosperity does not create going value;¹⁴⁹ nor are past losses, or so-called development costs, acceptable as a measure of going value.¹⁵⁰ The use of reproduction cost estimates have failed to win approval,¹⁵¹ and the infirmities of expert testimony have been duly emphasized.¹⁵² With every conceivable method of valuation unacceptable, it is difficult to see how any separate and additional allowance for going value can find a place in a rate base for the purpose of testing the confiscatory character of rates.

In the majority of cases, and in all of the recent cases, in which going value has been an issue, the Supreme Court has adhered to the position that no separate allowance for going value is requisite.¹⁵³ Ample recognition of going

¹⁴⁴ *Georgia Ry. & P. Co. v. Comm.*, 262 U.S. 625, 632 (1923); *Bluefield W. & Imp. Co. v. W. Va.*, 262 U.S. 679, 692 (1923).

¹⁴⁵ 272 U.S. 400, 414 (1926). Mr. Justice Butler cited many cases in support of his ruling, but their relevance to the matter at issue is not discoverable. See Whitten and Wilcox, *Valuation of Public Service Corporations*, Vol. 2, Sec. 749, pp. 1386-1418.

¹⁴⁶ *Denver v. Denver Union Water Co.*, 246 U.S. 178, 191-192 (1918); *Houston v. Southwestern Bell Tel. Co.*, 259 U.S. 318, 324-325 (1922).

¹⁴⁷ *Dayton P. & L. Co. v. Comm.*, 292 U.S. 290, 309 (1934).

¹⁴⁸ *Wilcox v. Consolidated Gas Co.*, 212 U.S. 19, 52 (1909); *Des Moines Gas Co. v. Des Moines*, 238 U.S. 153, 164-165 (1915); *Cedar Rapids Gas Light Co. v. Cedar Rapids*, 223 U.S. 655, 669-670 (1912); *Galveston Elec. Co. v. Galveston*, 258 U.S. 388, 396 (1922).

¹⁴⁹ *Des Moines Gas Co. v. Des Moines*, 238 U.S. 153, 171 (1915).

¹⁵⁰ *Galveston Elec. Co. v. Galveston*, 258 U.S. 388, 393-395 (1922); *Southwestern Bell Tel. Co. v. Comm.*, 262 U.S. 276, 288 (1923); *Georgia Ry. & P. Co. v. Comm.*, 262 U.S. 625, 632 (1923); *Bd. of Pub. Utility Comms. v. N. Y. Tel. Co.*, 271 U.S. 23, 31-32 (1926).

¹⁵¹ *Columbus G. & F. Co. v. Comm.*, 292 U.S. 398, 412-413 (1934); *St. Joseph Stock Yards Co. v. U.S.*, 298 U.S. 38, 62-63 (1936).

¹⁵² *Los Angeles G. & E. Corp. v. Comm.*, 289 U.S. 287, 317-319 (1933); *Columbus G. & F. Co. v. Comm.*, 292 U.S. 398, 412-413 (1934).

¹⁵³ *Des Moines Gas Co. v. Des Moines*, 238 U.S. 153, 171 (1915); *I. C. C. v. New York, N. H.*

value for purposes of determining the rate base is afforded when the physical property of the utility is valued as part of an established and successful enterprise, with allowance for such overhead costs as appear appropriate in the circumstances of the particular case.¹⁵⁴

Has the Supreme Court recognized development costs as entitled to any consideration in the regulation of utility rates and charges? The Court has not stated explicitly that an allowance for development costs or for the risks of an inadequate return in the early years of operation is included in the rate of return, but that this factor is implicit in the determination of the fair rate of return is apparent. This conclusion finds support in Mr. Justice Brandeis's statement in the *Galveston Electric Company* case—that "the fact that a utility may reach financial success only in time or not at all, is a reason for allowing a liberal return on the money invested in the enterprise."¹⁵⁵

The consideration of going-concern value and its role in rate regulation leads to only one conclusion, that no separate and specific allowance for going value should enter into the rate base. An examination of the decisions of the Court, especially those of more recent date, indicates clearly that legal precedents constitute no obstacle to disposing of the question of going value according to sound administrative and economic principles. From the administrative viewpoint, the most compelling reason for dropping going value as a specific intangible value is the fact that years of regulatory effort have failed to develop a satisfactory measure of this element of value. The more fundamental reason for excluding going value from the rate base is that its inclusion is in conflict with controlling economic principles. Going value as an element of "value" dependent upon the earnings of the utility is utterly inconsistent with the basic principles of rate regulation, involving circular reasoning without a possibility of arriving at an independent measure of this "value." As an element of "cost," the claim for consideration of going value only appears to rest on better logical grounds. The "cost" imposed is the risk of an inadequate return during the early years of the company's existence. But this "cost" is always and inevitably a factor influencing the cost of capital and is thus reflected in the rate of return. Any addition of going value to the rate base constitutes a duplication of a "cost" that has already been paid. Going value has no place in a valuation for rate regulation.

cf. *H. R. Co.*, 287 U.S. 178, 191 (1932); *Los Angeles G. & E. Corp. v. Comm.*, 289 U.S. 287, 313-319 (1933); *Columbus G. & F. Co. v. Comm.*, 292 U.S. 398, 412-413 (1934).

¹⁵⁴ That such is the present position of the Superior Court may be seen by reference to three recent decisions:

"The substance of appellant's claim is that these figures are exclusively attributable to physical elements. Assuming that to be true, it does not follow that the Secretary failed to include proper allowance for going concern. . . . The value of appellant's property used in stockyard services is single in substance. . . . While it may be considered as made up of tangible and intangible elements, it is not necessarily to be appraised by adding to cost figures attributable to mere physical plant something to cover the value of the business. . . . Appellant's plant without business, present or prospective, would be worth much less than the cost figures found by the Secretary to represent value. Appellant's claim, that the rate base includes nothing on account of going concern value, is without foundation in fact." (*Denver Union Stock Yard Co. v. U.S.*, 304 U.S. 470, 479 [1938].) See also *Dayton P. & L. Co. v. Comm.*, 292 U.S. 290, 309 (1934), and *St. Joseph Stock Yards Co. v. U.S.*, 298 U.S. 38, 64 (1936).

¹⁵⁵ 258 U.S. 388, 395 (1922).

CONTRACTS. Utility corporations are parties to a variety of contracts. With changes in economic conditions, new technical developments, et cetera, these contracts may become highly advantageous in relation to conditions under which they could be renewed.

Should favorable contracts be appraised and included in the rate base upon which utilities are permitted to earn a return? Many considerations lead to the only answer that can square with the principles of regulation—that favorable contracts have no place in valuations for rate making. It is the duty of the utility to provide its service at the lowest cost consonant with good service; when consumers have paid in their rates a sum sufficient to cover operating expenses, including the salaries of officers, the corporation has been fully compensated for the skill and foresight that those officers may display in negotiating contracts favorable to low-cost operations. To conclude that favorable contracts should enter into the calculation of the rate base would open the way for utility companies to request the inclusion of all savings in costs as part of the property upon which they earn a return; and the practical consequence of such a policy would be to make contracts tending to reduce costs the occasion for demands for larger earnings.

The regulatory authorities have not followed a common policy with respect to claims for the inclusion of contract values in the rate base. In a substantial proportion of the cases, contract values have been rejected. In a case involving a related question,—the Interstate Commerce Commission, in its valuation of the railroads, had included trackage rights and similar contractual rights in the inventory but gave them no separate and specific value—the Supreme Court was willing to accept the conclusion that no separate value need be assigned to valuable contractual rights.¹⁵⁶ Those instances where a commission or court has been disposed to include a sum for contract value in the rate base reveal the possibility of imposing special hardship on the utility corporation, for example, where valuable property has been rendered obsolete by the negotiation of the contractual arrangement without the company's having accumulated a sufficient depreciation reserve.¹⁵⁷ If, despite all objections, contract values find their way into the rate base, provision must be made for the depreciation or amortization of such items during the life of the contract.

PATENTS. The treatment of patents and patent rights in rate cases presents a number of puzzles. One source of difficulty is the possibility of a large difference between the cost of the individual patent, where the utility has itself developed a new process, and its actual or potential commercial value. Yet the commercial value of a patent is clearly inappropriate in the appraisal for rate-making purposes, depending, as it does, upon the earnings realized under a particular schedule of charges. Commonly, patents are embodied in equipment which has a market price; and if the equipment sells in competition with other apparatus, the purchase price becomes the presumptive

¹⁵⁶ *I.C.C. v. New York, N. H. & H. R. Co.*, 287 U.S. 178, 191 *et seq.* (1932).

¹⁵⁷ *Bonbright v. Comm.*, 210 Fed. 44, 52-54 (D. Ariz., 1913); *Valparaiso Lighting Co. v. Comm.*, 190 Ind. 253, 129 N.E. 13 (1920); *Duluth St. Ry. Co. v. Comm.*, 4 F. (2d) 543 (D. Minn., 3d Div., 1924); *Re Duluth St. Ry. Co.*, P.U.R. 1927A, 41 (Minn., 1926).

standard for rate regulation. Occasionally a company may be licensed to utilize a patented process on payment of an annual license fee, and as this fee enters into the operating expenses, no question of valuation arises. In rare cases, the utility itself may own a patent or a right to the use of a patent, and demand the inclusion of its value in its rate base.

The case of *Pacific Gas and Electric Company v. San Francisco* turned on the propriety of including patent values in the rate base.¹⁵⁸ The gas engineer of the utility had developed a new process for the manufacture of oil-gas, and for \$46,000, had granted the exclusive right to the use of this process in its territory to the Pacific Gas and Electric Company. The company estimated that the adoption of the new process rendered obsolete property carried on its books at \$800,000; but although the case had been in litigation for eleven years, the actual loss from replacements was only \$237,651.¹⁵⁹ The company claimed for its patent rights a value of \$4,203,300, based upon a capitalization of the estimated annual savings; it also insisted that the cost of the superseded property should be amortized out of subsequent earnings. The lower court included patent rights at their cost and excluded an allowance for amortization of obsolete property, whereupon the company appealed to the Supreme Court on the ground that the rates established were confiscatory, citing these two rulings as errors. The Court remanded the case to the lower court, holding that confiscation resulted from ignoring both the need for the amortization of the obsolete property and the value of the patent rights, leaving to the lower court the choice of which course to follow.¹⁶⁰

No final conclusion as to the status of patent rights for purposes of a fair-value appraisal is possible from the *Pacific Gas and Electric* case. The decision itself presented the lower court with an alternative. The better choice would obviously be the amortization of the undepreciated balance of the property prematurely retired, while including patent rights in the rate base at their cost.¹⁶¹ It should also be noted that any valuable patent is quite likely to be a source of non-operating revenue to the company if other organizations are licensed to use the patent. In general, the preferable treatment would be the complete elimination of patent rights from the rate base in favor of a reasonable allowance for patent license fees in the operating expenses of the utility.

WATER RIGHTS. The valuation of water rights, either as a part of the value

¹⁵⁸ 265 U.S. 403 (1924).

¹⁵⁹ *Ibid.*, 415, 419.

¹⁶⁰ Mr. Justice Brandeis differed strenuously from the majority, largely on the basis of the facts. He indicated that the company was already realizing more than half of the estimated annual savings under the new process of manufacture from the rates prescribed; that the obsolescence had not materialized as rapidly as the company's predictions had indicated; that amortization would have been possible under the rates which the utility was opposing; and that the company had had a sufficient reserve for depreciation to care for all of the retired and to-be-retired property, but that approximately a year before the institution of the case, it had charged off its depreciation reserve to surplus.

One particular observation in the majority opinion is inconsistent with the fundamentals of sound rate regulation, and should certainly be repudiated by the Court if the question should again be presented: "The amount of money actually paid to the inventors was not the proper measure of worth (of the patent rights). Experience had demonstrated a much higher one; and to obtain the benefit of their use appellant sacrificed much." (*Ibid.*, 416.)

¹⁶¹ Should this procedure become the general rule, it would, of course, be necessary to interpret the "cost" of a patent liberally to include the expenditures for some of the "misses" as well as for the particular "success."

of utility lands or as a separate element of value, raises several problems not heretofore considered. Three types of water rights are encountered. The utility may have complete ownership of a source of supply. As owner of riparian rights, it may have the right to use the flowing water of streams and rivers as an incident to ownership of the land on the banks, although it has no right to diminish that flow. And finally, where the source of supply is a navigable river in interstate commerce, or a part of the public lands or reservations of the United States, or the property of a state, the right of exploitation usually requires a license; such a water right is in all essentials analogous to a franchise.

The valuation of water rights. The valuation of water rights introduces problems quite as complicated as those encountered in the appraisal of gas lands. Like leaseholds and other rights in natural-gas fields, water rights are usually unique, the value of each being dependent upon the characteristics peculiar to it. Many different proposals for the establishment of the value of water rights have been presented for the consideration of commissions, of which five require critical discussion.

(1) Capitalization of earnings. Whenever the value of nonreproducible resources is sought, inquiry turns first to the economic advantages of owning the productive property. The fundamental error of attempting to use earnings as the determinant of a value, which is then to be used for the regulation of those earnings, has been so often stressed as to require no further discussion.¹⁶²

(2) Capitalization of savings over cost from an alternate source of supply. The capitalization of savings over cost of supplying the service from an alternative source or by an alternate means has been the method most persistently urged by utility companies. For utilities supplying water for individual or industrial consumption, it is the saving in the cost of obtaining the water supply from one watershed rather than another, from reservoirs rather than from a lake or river, or from wells rather than from a river. With hydroelectric developments, it is the saving over the cost of an equivalent output of power from a more distant stream, or, more commonly, over the cost of generation by a steam plant using coal or oil.

When the comparative method of valuation is used, the utility's claim for the value of its water right is usually only half the sum indicated by the capitalization of the savings, on the theory that the public and the utility should share equally in the advantages of the superior source of supply. Although this theory has found some acceptance among regulatory authorities,¹⁶³ the weight of authority is opposed to this standard of value.¹⁶⁴

The infirmities of the capitalization-of-savings method of valuing water

¹⁶² *Re Great Western Power Co.*, P.U.R. 1923C, 545, 563-564 (Cal., 1923).

¹⁶³ *Re Alabama P. Co.*, P.U.R. 1923B, 28, 38-40 (Ala., 1922). See also *Re Southern Nebraska Power Co.*, P.U.R. 1921C, 678, 700 (Neb., 1921); *Re Virginia R. & Power Co.*, P.U.R. 1922D, 352, 364-366 (Va., 1922).

¹⁶⁴ *Re Montpelier & B. Light & P. Co.*, P.U.R. 1916B, 973, 976-977 (Vt., 1916); *Re Pacific Gas & E. Co.*, P.U.R. 1923C, 385, 413-416 (Cal., 1922); *Re Capital Water Co.*, P.U.R. 1924D, 292, 297-298 (Idaho, 1924); *School Directors v. Highspire Water Supply Co.*, P.U.R. 1926D, 80, 89-90 (Pa., 1926); *Re Tennessee Eastern Elec. Co.*, P.U.R. 1926E, 376, 386-391 (Tenn., 1926); *Re West Coast Power Co.*, 22 Ann. Rep. Ore. P.S.C. 57 (1928).

rights are numerous and serious, involving both economic fallacies and unsound public policies. (i) The speculative and conjectural character of this method is vividly shown in the divergent valuations frequently presented for the same property: where an expert for the city testified to a value of \$41,000, three experts for the company sought to prove values of \$197,000, \$600,000, and \$2,000,000, respectively; and in another proceeding, the same expert demonstrated values of \$26,140,000, \$17,570,000, and \$14,025,000 for water rights which the commission finally valued at \$1,869,834.¹⁶⁵ These discrepancies in "value" illustrate the effect of changes in the estimates and assumptions on the basis of which the calculations are made. A change in the rate of capitalization causes exaggerated variations in the final value. Other opportunities for differences in estimates are to be found in differences in the capital cost of the alternate plant, fluctuations in the price of fuel,¹⁶⁶ the available flow of water, the demand and load factors for electric power, and the amount of energy sold. (ii) As a second objection, it may be noted that the capitalization-of-savings method cannot be assumed to reflect the actual value of any property; the most that can be said is that it indicates the maximum value that can possibly be assigned to property. It must often happen that the commercial value of a property as shown by a capitalization of its earnings, even in the absence of all regulation, will be less than the figure secured by a capitalization of savings. (iii) The fictitious nature of the appraisal secured by a capitalization of savings should also be recognized. The amount of the savings will depend upon the assumptions as to the alternative method. As the alternative method of production realizes reductions in cost, the value of the water rights dissolves and disappears. Also, for illustration, the assumption that a given quantity of electric power has the same value whether produced by water power or generated by steam is invalid.¹⁶⁷

(iv) The most convincing argument against the acceptance of the capitalized-savings-method of valuation is that the community is deprived of the benefits and advantages of proximity to natural resources. Nor is the nature of the fundamental issue varied by assuming that the utility shall be permitted to appropriate only half of the value of the water rights. In a fundamental sense, it is the demand for the water or water power, due to the proximity of the community, that gives value to the water rights; indeed, the location of the community may have been predicated upon the availability of water or cheap water power. The injustice of this method is exaggerated by the fact that the cheaper the water, and the more costly the alternative source of supply (that is, the more essential the natural resource is to the community), the

¹⁶⁵ *Re Tennessee Eastern Elec. Co.*, P.U.R. 1926E, 378, 386-391 (Tenn., 1926); *Re Pacific G. & E. Co.*, P.U.R. 1923C, 385, 413-416 (Cal., 1922).

¹⁶⁶ In one case, a price of 75 cents per barrel of oil gave a value of \$2,601,740.25, which was reduced to \$1,067,335.25 by a decline in the price to 50 cents per barrel. (*E. Bakersfield Imp. Assn. v. San Joaquin L. & P. Corp.*, P.U.R. 1916C, 832, 886 [Cal., 1916].) In another case, a value of \$14,025,000 was calculated with oil priced at \$1.75 per barrel; before the Commission reached its decision, the price of oil had fallen to 93 cents per barrel; and at 92 cents per barrel, the water rights would be valueless. (*Re Pacific G. & E. Co.*, P.U.R. 1923C, 385, 413-416 [Cal., 1922].)

¹⁶⁷ What justification exists for the valuation of cheap water power in terms of dear coal? Why should not the coal be valued in terms of the cheap hydro-power?

higher the valuation placed on the water rights and the higher the prices imposed upon the consuming public.¹⁶⁸

(3) The market value. The use of the market-value standard for water rights would seem to encounter the same fatal defects that beset the application of this standard to the appraisal of natural-gas lands and leaseholds. Water rights are *sui generis*; comparisons with the prices paid for other water rights are seldom of probative force. Moreover, with the widespread adoption of electric power as the motive force in industry, there is no market for water rights outside of the utility field, and the price that a utility would pay for a water right should not be persuasive of its value for rate-making purposes, since that price may reflect the prospective earnings from the exploitation of the right. These objections should lead to the rejection of this standard, but a few courts and commissions have given the market-value measure the stamp of their approval.¹⁶⁹ The Interstate Commerce Commission has been among those adopting a modified market-value standard.¹⁷⁰

(4) A present-value standard. Some commissions have sought to apply the judgment method of the *Smyth v. Ames* rule to the determination of the present value of water rights. By statutory enactment, Wisconsin adopted the present value of the undeveloped water right as the measure of its value for rate-making purposes. The Commission was therefore charged with the duty of valuing such water rights in order to carry out the declared policy of excluding all appreciation in water rights from both the rate base and the future purchase price, if at some future date the public should decide to purchase the utility.¹⁷¹

The present-value standard as applied to water rights has weaknesses beyond those that are encountered in the valuation of other forms of property, particularly to the extent that other evidences of value, in themselves unreliable, are accepted as indicative of present value. Under the Wisconsin procedure, the present value so obtained must depend largely upon the date as of which the water rights are valued.

(5) The cost of the water rights. The standard of value that is most acceptable in the case of natural-gas lands and leaseholds is also the sound and appropriate standard for the appraisal of water rights. The actual cost to the utility, when not unreasonable or artificially inflated, affords the most satisfactory standard for the valuation of water rights. Though it has been said that the cost standard, by depriving the utility of all benefit from appreciation in value as the project is developed, will discourage the exploitation of water

¹⁶⁸ *Grafton County E. L. & P. Co.*, 4 N.H. P.S.C. 171, 178-179 (1913).

See also: *Ross v. Burkhardt M. & E. P. Co.*, 5 W.R.C. 139 (1910); *Re California-Oregon P. Co.*, P.U.R. 1918C, 253-254 (Or., 1917); *Grants Pass v. California-Oregon Power Co.*, 11 Ann. Rep. Or. P.S.C. 51 (1917); *Peterson v. Washington Water P. Co.*, P.U.R. 1918F, 591, 592 (Ida., 1918); *Re Bluefield Water Works & Improv. Co.*, P.U.R. 1921E, 655, 664-665 (W.Va., 1921); *Re Rockford Electric Co.*, P.U.R. 1925D, 154, 159-161 (Ill., 1925).

¹⁶⁹ *Murray v. Comm.*, 27 Idaho 603, 150 Pac. 47, L.R.A. 1916F, 756, P.U.R. 1915F, 436, 441-443 (Idaho Sup. Ct., 1915); *Re Grafton County Electric Light & P. Co.*, 6 N.H. P.S.C.R. 191 (1917); *Re Montgomery Hydroelectric Co.*, P.U.R. 1917C, 224, 234 (Ill., 1917).

¹⁷⁰ *San Pedro, Los Angeles & Salt Lake R. Co.*, 75 I.C.C. 463, 504 (1923); *Los Angeles & S. L. R. v. U.S.*, 8 F. (2d) 747, 752 (S.D. Cal., 1925).

¹⁷¹ The highlights of the Commission's procedure are set forth in *Re Wisconsin-Minnesota Light & Power Co.*, P.U.R. 1916D, 812, at pages 817-818 (Wis., 1916).

resources,¹⁷² the argument is not logically consistent with the principles of rate regulation: the utility does not refuse to invest in physical structures and equipment because it is confined to a fair return upon its investment, and there is no reason to think that it would behave differently with respect to investments in the development of water rights. The fundamental justice of this method of valuation is apparent when it is realized that the presence of valuable natural resources should redound to the benefit of the entire community, that the value of such natural resources is largely the creation of the community through providing a demand for the water or power, and that any appreciation in the value of water rights must be a reflection of monopoly elements which have no proper place in the determination of the charges of regulated enterprises.

If the water right is in the nature of a franchise, rather than the private property of the utility, as in the case of licenses for projects under the jurisdiction of the federal government, actual original cost is the legal standard of valuation. The Federal Water Power Act of 1920 specifically provides "that the values allowed for water rights, rights of way, lands or interest in lands shall not be in excess of the actual reasonable cost thereof at the time of acquisition by the licensee."¹⁷³

The propriety of including water rights in rate-making value. The legal status of water rights in relation to the regulation of utility rates is not free from ambiguity. In an early rate case, the Supreme Court insisted that allowance should be made for water rights,¹⁷⁴ and although that decision was influenced by the laws of the particular state in which the utility was located, the principle appears to be well established that, where it is the owner of water rights used in the public service, the utility is entitled to their inclusion in the rate base. In the *Bluefield Water Works & Improvement* case, the West Virginia Commission appraised the water rights of the company as a part of the value of its lands, and this treatment was not criticized by either the state or federal Supreme Court;¹⁷⁵ however, this case is a doubtful precedent, as the Commission found the water rights of little or no value. In the *Denver Union Water* case, the Supreme Court stressed the difficulties and uncertainties as to the proper treatment of water rights, but found it possible to avoid passing upon the question.¹⁷⁶ In the *Indianapolis Water Company* case, however, Mr. Justice Butler's decision states flatly that "the value of these water rights must be included" in the rate base.¹⁷⁷

¹⁷² *Re Ashland Electric Light, Mill & P. Co.*, 12 Ann. Rep. Neb. S.R.C. 348 (1919); *Re Utah Power & Light Co.*, P.U.R. 1923B, 9, 18-19 (Utah, 1922).

¹⁷³ 41 Stat. 1063, Sec. 14. See also *Re Alabama Power Co.*, P.U.R. 1932D, 345, 357-359 (F.P.C., 1932); Affirmed: *Alabama Power Co. v. McNinch*, 68 App. D.C. 132, 94 F. (2d) 601, (1937).

¹⁷⁴ *San Joaquin & Kings River Canal Co. v. Stanislaus*, 233 U.S. 454, 459-460 (1914).

¹⁷⁵ 89 W.Va. 736, 110 S.E. 205 (1921); 262 U.S. 679 (1923).

¹⁷⁶ 246 U.S. 178, 192-194 (1918).

¹⁷⁷ *McCardle v. Indianapolis Water Co.*, 272 U.S. 400, 413-415 (1926).

In a later edition of this controversy, *McCart v. Indianapolis Water Co.*, 302 U.S. 419 (1938), at pages 432-433, Mr. Justice Black comments, in dissenting, on these water rights:

"First, the so-called 'water rights'—The Company takes the position that water rights should have been valued at about \$2,000,000.00. Expert witnesses for the city valued these rights from nothing to \$75,000.00, and expert witnesses for the Company at \$1,000,000.00 or more. This illustration is typical of the wide variations in expert evidence on 'reproduction cost'; it is a

In the absence of conclusive precedents, regulatory commissions have pursued different paths in their treatment of water rights. In some cases, water rights have been assimilated to franchises and valued at cost to the utility.¹⁷⁸ In a number of valuations, water rights have been included in the appraisal of the lands of the utility, no separate values being recognized;¹⁷⁹ while in a few instances, water rights have been valued separately from, and in addition to, the utility's lands.¹⁸⁰

The importance of water rights and the large claims for values in connection therewith make it imperative that this unsolved problem receive early and critical consideration from regulatory authorities. The existing lack of uniformity is not only a source of discrimination in the treatment of different investments, but it is also productive of controversy as the utility and the public seek application of the rule that is most favorable to their interests in the particular case. The divergent practices of regulatory commissions are explainable only in part in terms of differences in the laws of property in their particular states; in large measure, the different practices are indicative of the uncertainty and confusion as to the proper methods of recognizing water rights in the rate base. A sound public policy, sensitive alike to the interests of consumers and investors, awaits acceptance. Since the adoption of the Federal Water Power Act in 1920, the inclusion of water rights in the rate and security bases at actual original cost has been the statutory rule governing our most important category of water rights, and the extension of the cost principle to all water rights would realize many advantages for industry and public alike.

6. DEDUCTIONS FROM GROSS VALUE: ACCRUED DEPRECIATION

GENERAL CONSIDERATIONS. The calculation of reproduction cost has thus far been concerned successively with the allowances for physical property (other than land), land, overhead costs, and intangible elements of value. The total represents the cost of reproduction of the property in a new condition. To

typical 'estimate.' . . . According to one theory, it is claimed water which would otherwise flow down stream is diverted by the Company; that the Tom Taggart Park in Indianapolis might possibly be injured by this diversion (but the city has not complained); that the stream offers possibilities of scenic beauty if there were adequate water and if it should be made suitable for navigation by small pleasure crafts. It does not appear that this formula evolved as a result of anyone's expressed or frustrated desire to sail this stream. From the possibility, however, that the stream could be used for this purpose if imaginary people should so desire, an imaginary damage to these imaginary sailors is discovered. Based upon this potential menace to these imaginary people and their imaginary desire to use this stream, an imaginary value of \$200,000.00 is suggested as the cost which the Company might incur in discharging its imaginary duty to improve the stream for these imaginary sailors.

"It is difficult to believe that such concepts of property can establish clear proof that the Constitution of the United States has been violated."

¹⁷⁸ *Alabama Power Co. v. McNinch*, 68 App. D.C. 132, 94 F. (2d) 601, (1937).

¹⁷⁹ *Re Redondo Beach*, P.U.R. 1915B, 429, 431-432 (Cal., 1915); *Peck v. Indianapolis L. & H. Co.*, P.U.R. 1916B, 445, 451-452 (Ind., 1915); *Re Interstate Water Co.*, P.U.R. 1922E, 246, 257-259 (Ill., 1922); *Aluminum Goods Mfg. Co. v. Laclede Gas Light Co.*, P.U.R. 1927B, 1, 17-18 (Mo., 1926); *Re Montana Power Co.*, 10 P.U.R. (N.S.) 293, 296 (Mont., 1935); *Re West Virginia Water Service Co.*, 17 P.U.R. (N.S.) 40, 50-53 (W.Va., 1936).

¹⁸⁰ *Re Portland Electric Power Co.*, P.U.R. 1930D, 357, 369-370 (Or., 1930).

arrive at an acceptable measure of the reproduction cost of the property in its present condition, deductions are required to reflect those respects in which the property is inferior to a similar new property. Deductions from gross value are made for superseded property, for unused property, for depleted reserves, and, most important of all, for accrued depreciation. The extent to which these items require an abatement in the valuation total will depend upon the principles controlling the preparation of the inventory. In many reproduction-cost valuations, the gross-value figures are subject to deductions only for accrued depreciation, and in all determinations of the rate base, the treatment of accrued depreciation is both theoretically and practically the most important item in this category.

THE DEPRECIATION CONTROVERSY. *Divergent opinions.* The policies followed by the commissions and courts with respect to the deduction of accrued depreciation in arriving at the rate base may either permit the utilities to retain substantial and improper sources of revenue or may afford correspondingly large savings to consumers. This conflict of pecuniary interests is the fundamental source of the depreciation controversy, and colors the discussion of all questions relating to depreciation accounting and the annual allowances for depreciation in operating expenses.¹⁸¹

The divergence in financial interests is not the sole source of disagreement respecting accrued depreciation. The variety of senses in which the terms "depreciation" and "accrued depreciation" are used engender and perpetuate controversy. The measurement of depreciation is difficult and lacks precision: some difficulties stem from confusion as to the nature of depreciation; others are inherent in the complexities of the subject; and others result from the absence of reliable data as to the service life of various depreciable categories.

Concepts of accrued depreciation. The various meanings attaching to the terms depreciation and accrued depreciation reflect the different aspects of the depreciation problem. Without exhaustive treatment, certain of the more commonplace concepts of depreciation may be briefly appraised.

(1) ***The service-life concept.*** The most useful concept of accrued depreciation is *that decline in value which is due to the expired service-capacity of the property.*¹⁸² This decline in value may be due to physical causes, wear and tear and exposure to the elements, or to functional causes, such as inadequacy or obsolescence. The decline in service capacity may be either absolute, in comparison with a similar new property, or it may be relative, in comparison with a new and more efficient substitute property. This concept is in harmony with the definition adopted earlier for depreciation as "the loss in service value not restored by current maintenance and incurred in connection with the consumption or prospective retirement of property in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance." It is also consistent with the Supreme Court's discussion of accrued depreciation in confiscation cases.¹⁸³

¹⁸¹ Chapters VIII and XVIII.

¹⁸² Depreciation is not to be associated with all declines in the value of an asset. Those changes in value which are due to changes in the earning capacity of the business and those which accompany changes in the general level of prices are not normally to be identified with depreciation.

¹⁸³ The theory is sometimes called the "age and life concept of depreciation," because the

(2) *Observed depreciation.* Utility companies frequently argue that accrued depreciation means that depreciation which can be observed and measured by an inspection of the property. This theory utilizes trained engineers or experienced appraisers who examine the property and state their results as a "condition per cent"; that is, if certain items are said to be in 85 per cent condition they are 15 per cent depreciated. Observed depreciation may be limited to the physical deterioration which results from wear and use and from the action of the elements, or it may also embrace depreciation attributable to obsolescence and inadequacy. The engineers may be instructed to report only the depreciation actually experienced, or they may be asked to indicate the functional depreciation which is imminent, that which will result from forces currently in operation.

The concept of accrued depreciation in terms of observed depreciation is subject to serious shortcomings. The fact is that the factors which limit the service life of property and cause its service capacity to decline with time and use are to only a limited degree "observable" until just prior to the retirement and replacement of the property. The candle, the pencil, and the coal pile are not typical of the assets with respect to which the problems of depreciation arise, and observation scarcely suffices to identify depreciation in the electric lamp, the generator, the pipeline, et cetera. It would, of course, be possible for the engineer or other appraiser to avail himself of the life tables and all the other data on the basis of which the service-life concept of depreciation rests its determinations, but if he relies on these statistical aids the concept of "observed depreciation" is substantially modified.

(3) *The immortal-plant theory.* This concept is sometimes urged in support of the thesis that the estimate of accrued depreciation should be confined to that amount which is revealed by an inspection of the property. But in its more extreme form, the theory is based on the proposition that a diversified and well-maintained plant, consisting of many assets each of relatively small cost, is just as valuable as a new plant, and that therefore there is no accrued depreciation in such a plant. It is recognized that a new plant has certain advantages in comparison with the established plant, especially in its freedom from costly repairs and replacements in its early years. But it is urged that the established plant possesses certain offsetting advantages, in that it has been through the costly "breaking-in" period and is a seasoned operating unit.

There are certain logical and practical weaknesses in this assumption that a utility plant is an immortal instrument of the public service. Even if it be assumed that the plant as a whole has an indefinitely long life, the individual units composing the plant are certainly not immortal. Secondly, it is a purpose of depreciation accounting to provide for the proper allocation of retirement costs among those who have taken service during the productive life of the retired units. Certainly the charging of replacements to operating expenses, the method presumably conforming to the immortal-plant theory,

amount of accrued depreciation present in the group of depreciable units is estimated at that percentage which the average age of the units bears to the average prospective service life of the units. The consideration of age alone in the determination of accrued depreciation may overlook the importance of functional factors in setting a final limit to the useful life of property; both physical and functional causes limiting the life of property should be considered.

would not accomplish an accurate allocation of depreciation costs among the users of the utility service. Thirdly, the practical utility of the theory rests upon the assumption that replacements for the seasoned plant will be relatively uniform from one year to another. Since a very considerable proportion of all retirements results from functional causes, the assumption of uniformity in annual retirement costs rests on a very insecure foundation. And finally, the assumption of immortality for the plant as a whole is difficult to defend in the light of experience. Street railways have given way to buses, steam railroads have abandoned branch lines, gas utilities have already lost most of their lighting market, and the manufacture of gas has been abandoned as long-distance natural-gas pipelines have invaded new territory. Neither the corporate entity nor the physical plant has any guarantee of immortality which would justify ignoring the accrued depreciation in the units constituting an operating utility plant.¹⁸⁴

(4) *The accounting concept.* The accounting concept of depreciation is based upon cost, and associates accrued depreciation with the reserve for depreciation. But since there are many circumstances which might account for a discrepancy between the actual reserve and the reserve that would be required by adherence to the accountants' schedules for the depreciation of the particular property, the *reserve requirement* rather than the actual reserve is the embodiment of this concept. In the discussion of the measures of accrued depreciation the causes of discrepancies between the reserve accumulation and the accrued depreciation, as measured by service-life, will be noted.

(5) *The value concept of depreciation.* The value concept identifies depreciation with the difference between the present value of the existing property and the present value of a hypothetical new property.¹⁸⁵ The depreciation in an asset, according to this concept, may be greater than the decline in the value of the old asset, if the existing asset, even though new, would now be less valuable by reason of the availability of a more efficient substitute. However useful this concept of depreciation is in the valuation of property generally, it is of limited usefulness in the valuation of utility properties. The courts and commissions have adhered to the existing property as their standard in testing and in prescribing rates. In utility regulation, depreciation is not simply a value concept.

MEASUREMENT OF ACCRUED DEPRECIATION. Many different measures are

¹⁸⁴ A closely allied theory of depreciation has been called the organic theory. This theory distinguishes between the depreciation of a functional group of assets and the sum of the depreciation of the individual units composing the functional group. It arrives at the opposite conclusion to that of the immortal-plant theory, namely, that the depreciation of the functional group, in this instance the plant, is usually greater than the sum of the depreciation of the individual units, separately considered. This condition results from the fact that when the value of any one asset is affected by a change in another, the value of the two assets considered together is less than the sum of their values. This theory would treat the functional group of assets as a single asset for purposes of valuation or for the determination of the amount of accrued depreciation. To illustrate, one should not value a 1930 automobile as equal to the sum of the value of the individual parts, nor is the value of an obsolete utility plant the sum of the value of its constituent units even though the utility would pay full cost for any individual parts whose replacement might be necessary to enable the plant to continue functioning. See Bonbright, *Valuation of Property*, Vol. I, p. 209.

¹⁸⁵ Bonbright, *Valuation of Property*, Vol. I, p. 184

offered for the determination of accrued depreciation. The adoption of a particular measure will depend upon the concept of depreciation which is accepted and the purposes for which accrued depreciation is being determined. Three standards are in common use in the regulation of the earnings of utility companies—the service-life, the inspection or observation, and the accounting-reserve, measures. These three methods require discussion. In addition, a measure which is in harmony with the value concept of depreciation will be briefly described. However, two preliminary questions demand an answer: upon what base shall accrued depreciation be measured, and shall accrued depreciation include functional as well as physical depreciation?

The base for measuring accrued depreciation. In discussing depreciation accounting, the merits and weaknesses of three bases for depreciation—the original-cost, the reproduction-cost, and the fair-value bases—were explored.¹⁸⁰ The consensus of regulatory authorities has favored the use of the original-cost base both in depreciation accounting and in the calculation of accrued depreciation. The original-cost base conforms to the definition of depreciation as the lessening in cost value due to the exhaustion of the service life of the property. This base also permits the use of the accounting and statistical data pertaining to depreciation, all of which are founded on original-cost figures. It also facilitates comparisons with the accounting records of the amounts paid by consumers and charged to depreciation expense and with the sums accumulated as reserves. Indeed, all of the arguments for depreciation accounting on a cost basis apply with equal force to the use of cost in the measurement of accrued depreciation, and in addition, there are the advantages attaching to the use of a measure of accrued depreciation which conforms to the standards adopted in recording the allowances for current depreciation.

A complication may arise in the statement of accrued depreciation when valuations are made on other than an original-cost basis. This situation may be met most simply by applying to other standards of value the same percentage for accrued depreciation that is found with respect to the original cost of the property. Thus if a utility company is estimated to have an original cost of \$1,000,000 and a reproduction cost new of \$2,000,000, and if accrued depreciation calculated on the original-cost base is \$180,000 or 18 per cent, it is obvious that the accrued depreciation with respect to the reproduction cost is also 18 per cent, or \$360,000.

What items of property, if any, are exempt from depreciation in determining the rate base? The commonest exception is *land*, which is undepreciated for two reasons: first, it is assumed that land is not subject to any exhaustion of its service capacity, and secondly, the prevailing valuation practice takes land at its present value, as measured by the market value of similar adjacent lands. With respect to particular types of land, notably natural-gas holdings, it is recognized that depreciation, or depletion, must be calculated and deducted; and rights in land that are subject to termination are similarly appropriate objects for depreciation. It is not usually recognized that a utility's holdings of land, although not generally subject to physical depreciation, may undergo functional depreciation and become unsuited to the company's operations.

¹⁸⁰ Chapter VIII, Sec. 5.

Where such functional depreciation can be foreseen, it is advisable that it be included both in the allowance for depreciation expense and in valuations. Sometimes *improvements on land*, as grading, are undepreciated, and whereas there is some justification for assuming that the grading of a railroad right-of-way is immune from depreciation,¹⁸⁷ it is doubtful whether the same justification can be found for the improvements made to land by other utilities. The question of *overheads* has found the courts and the commissions divided. Mr. Justice Brandeis' statement that "many items included in the overhead cost of original construction may properly be excluded in calculating the amount of the depreciation annuity" is the nearest to an authoritative pronouncement on the treatment of overheads in the determination of accrued depreciation.¹⁸⁸ In its valuation work, the Interstate Commerce Commission has depreciated overhead costs along with the accounts to which they apply.¹⁸⁹ The theoretically correct procedure would be to segregate overhead costs into two categories. Those overheads which are associated with the enterprise in its entirety and which are nonrecurring may appropriately be capitalized and carried on the books without subsequent depreciation; such are the expenditures for promotion, organization, legal (in part), administrative, engineering (in part), taxes during construction (in part), and interest during construction (in part). But other overhead costs are associated with the construction of physical properties which depreciate, and these overheads should be depreciated proportionately with the associated physical properties. The second group includes contractor's profit, contingencies and omissions, engineering and supervision (in part), legal (in part), insurance and damages, taxes (in part), and interest during construction (in part). Some commissions have attempted this theoretically correct segregation of overhead costs.¹⁹⁰ but most dispose of all overheads together, either depreciating all or none.

Shall functional as well as physical depreciation be calculated? An accurate measurement of accrued depreciation must record the total decline in the service value of depreciable property from whatever source this has come. It is obviously inaccurate to rest the calculation for accrued depreciation on physical depreciation and make no allowance, or only an inadequate allowance, for functional depreciation. If the determination of the accrued depreciation be based on the past experience of utilities, the measure will certainly reflect the dominating influence of functional depreciation, for such depreciation is relatively more significant in the developmental period of any industry.

In allowing for functional causes in the measurement of accrued depreciation a quantum of judgment is required. Functional depreciation, existing or imminent, cannot be disregarded,¹⁹¹ but the possibility of functional depre-

¹⁸⁷ *Texas Midland R.*, 75 I.C.C. 1, 184 (1918).

¹⁸⁸ *Galveston Elec. Co. v. Galveston*, 258 U.S. 388, 398-399 (1922). In two earlier cases, however, the Court had approved valuations wherein the masters had depreciated overheads: *Des Moines Gas Co. v. Des Moines*, 238 U.S. 153, 161-162 (1915); *Denver v. Denver Union Water Co.*, 246 U.S. 178, 191 (1918).

¹⁸⁹ *Texas Midland R.*, 75 I.C.C. 1, 153 (1918).

¹⁹⁰ *Lima v. Lima Tel. & Tel. Co.*, P.U.R. 1916E, 670, 675 (Ohio, 1916); *Re Capital Transit Co.*, 25 P.U.R. (N.S.) 177, 225 (D.C., 1938).

¹⁹¹ See *Idaho Power Co. v. Thompson*, 19 F. (2d) 547, 566 (D.C. Ida., 1927).

ciation of an indeterminate nature does not justify an excessive allowance for depreciation. The Interstate Commerce Commission met this problem in its valuation work by adopting the following practical course: the valuation engineers were instructed to consider all functional depreciation which had already accrued, for where depreciation has already taken place it makes no difference whether the cause be physical or functional, and as to the future, the functional depreciation was considered only when it was imminent. "Generally speaking, in so far as functional depreciation can be accurately forecast, it must be considered, but speculation must not be resorted to."¹⁹²

The service-life method. This measure of accrued depreciation derives from the service-life concept of depreciation, and it is usually associated with one of the reserve methods of depreciation accounting. The objective is to measure the diminution or consumption of service capacity that has occurred since the installation of the equipment.

The procedure in the application of the service-life measure involves the preparation and use of "life tables." On the basis of the experience of the given utility and of other utilities with the same equipment under similar conditions, it is possible to develop mortality tables which permit a reasonably accurate forecast of the useful life of depreciable property. Even where the property is so new that there is no operating experience to guide the preparation of life tables, the manufacturer is usually able, on the basis of tests, to state probable minimum lives under a variety of operating conditions. The life table is useful and reliable in proportion as it reflects the actual experience of the individual utility with the particular category of property.

The service life of property can be stated in terms of time, of output, or of use. If property depreciates primarily from wear and use, it may be most appropriate to measure depreciation in terms of the number of hours of use or of the units of output. With utilities, however, functional causes are still of large importance in determining the time of the ultimate retirement, and it is therefore customary to state the service life of equipment in units of time. It is usual to assume that the service capacity of the unit diminishes uniformly throughout its life span.

The service-life measure of accrued depreciation has been the target for a vast amount of criticism, particularly from the utility companies. Two motives usually underlie these criticisms: an opposition to the reserve method of accounting for depreciation, and a desire to keep at a minimum the deductions for accrued depreciation in determining the rate base. The criticisms concentrate on three aspects of the service-life method: the accuracy of the estimates of service life on which the mortality tables are based, the estimates of net salvage value as one of the determinants of service value, and the use of units of time in measuring the expiration of service life.

The opposition to the use of the service-life measure of accrued depreciation is readily understandable. In the examination of the questions relating to the treatment of current depreciation as an operating expense, it was noted that the service-life method limits the freedom of management to adjust annual depreciation charges according to available net income and sometimes inter-

¹⁹² *Texas Midland R.*, 75 I.C.C. 1, 127-128 (1918).

feres with the maintenance of regular dividend payments. Much more serious, from the point of view of utility managements, is the effect of the service-life theory on the estimates of the accrued depreciation to be deducted in finding the rate base. While most utilities have been disposed to take advantage of liberal earnings to accumulate ample, or even excessive, depreciation reserves, they have quite generally opposed a correspondingly large deduction for accrued depreciation in the determination of rates and charges.¹⁹³ Other utilities, without the opportunity to accumulate similarly adequate reserves, have not unnaturally feared that the acceptance of the service-life method of measuring depreciation would lead to the deduction of sums in excess of their depreciation reserves, with resulting lower rates and a permanent impairment of their earning capacity.

The critics of the service-life measure of depreciation focus their main attack upon the "theoretical" character of the estimates of service life. They insist that it is not possible to forecast accurately the service life of most depreciable property, and that, even when dependable records have been developed with respect to the life of certain equipment under one set of conditions, these records are of dubious validity as applied to other companies operating under different conditions.

The answer to these criticisms is to be found in the actual experience of utility industries with those methods of accounting for depreciation which depend upon the use of life tables. That utility which has been most exposed to the functional causes of depreciation, the telephone industry, has found the reserve method of providing for depreciation well adapted to its requirements.¹⁹⁴ It is apparent that the soundness of the service-life measure of depreciation is in no way impaired by evidence that particular units of property do not conform to the predictions made with the aid of life tables. Like the mortality tables which insurance companies use, the life tables for utility properties are practicable and useful if they permit a reasonably accurate forecast of the experience which awaits a *group* of items, and upon this matter the citation of experience with individual items throws no significant light. Even with respect to the so-called functional depreciation, especially with the two most important items of inadequacy and obsolescence, there exists the possibility of incorporating the probabilities of service lives into statistical tables. The same studies of growth in demand for the service, of changing population trends and of general business conditions which have formed the basis for the construction of life tables for some utilities are available for other utility industries. Since the use of life tables is reasonable and practical in the allocation of depreciation expense, it must be concluded that it provides an appropriate measure of the accrued depreciation, which is in fact the depreciation expense that has been incurred in the past.

¹⁹³ The telephone companies, for example, while making liberal provision for current depreciation and accumulating ample reserves for accruing depreciation, usually ranging from 20 to 35 per cent of the book cost of telephone plant, have concurrently argued that in valuations for rate-making purposes the amount of accrued depreciation deductible from the cost of the plant should be only 7 to 12 per cent. (Federal Communications Commission, *The Investigation of the Telephone Industry* [76 Cong., 1 sess., House Doc. no. 340], p. 348.)

¹⁹⁴ *Depreciation Charges of Telephone Companies and Steam Railroad Companies*, 177 I.C.C. 351, 383, 387 (1931).

The prediction of the net salvage value, which is one of the determinants of the service value or depreciation cost, is also subject to criticism by opponents of the use of life tables. However, the amount of the net salvage value is generally such a small percentage of the total cost of the property that substantial errors in its prediction have no significant influence on either the financial provision for depreciation or on the measure of accrued depreciation.

Criticism of the use of units of time in the measurement of the accrued depreciation carries little weight where the provision for accruing depreciation is made on a time basis. It is probably true that depreciation does not "accrue" uniformly throughout the life of the depreciable items, but there exists no practical and accurate method of measuring the precise amount of depreciation attributable to a particular period of time (short of the full service life of the unit). It is both practical and fair (especially where the utility makes provision for depreciation expense on one of the reserve bases) to assume that the service life of property is exhausted uniformly throughout its useful life.

The legal status of the service-life method of determining accrued depreciation, like the other measures of depreciation, has not been finally adjudged by the Supreme Court. However, the service-life principle is so firmly established in use in the various reserve methods, both voluntarily and by commission order, that no question as to its validity would arise, were it not that the language of certain Supreme Court decisions, critical of so-called "theoretical depreciation," has been seized upon by those who oppose the service-life measure to bolster their opposition. In *Pacific Gas & Electric Company v. San Francisco*, Mr. Justice McReynolds objected to the treatment of the accrued depreciation which the master found on the "modified sinking fund method" and incidentally remarked that "facts shown by reliable evidence were preferable to averages based upon assumed probabilities."¹⁹⁵ But this is no precedent for the rejection of the service-life measure of depreciation; rather, it is a criticism of the deduction of depreciation caused by sudden obsolescence for which no adequate provision had been made through the accumulation of a depreciation reserve.¹⁹⁶ Similarly, the language of Mr. Justice Butler in the *Indianapolis Water* case to the effect that "the testimony of competent valuation engineers who examined the property and made estimates in respect of its condition is to be preferred to mere calculations based on averages and assumed probabilities" requires interpretation in the light of its context. In this instance the Commission's decision, based on the testimony of its own engineer, had found the depreciation to be only 6 per cent; hence in subsequently joining the city in urging another estimate of depreciation it was in effect asking the Court to reverse its own finding.¹⁹⁷

In support of the good legal standing of the service-life measure of depreciation may be cited economic principle, the implied sanction of the Supreme Court in a number of decisions, and the general use of this measure by many commissions. First, it must be noted that identical principles govern the esti-

¹⁹⁵ 265 U.S. 403, 406-407 (1924).

¹⁹⁶ The Court suggested that the defect could be cured either by providing for the subsequent amortization of the undepreciated balance of the property or through an appropriate allowance for the value of patent rights to the new process.

¹⁹⁷ *McCardle v. Indianapolis Water Co.*, 272 U.S. 400, 416 (1926).

mate of the loss of service capacity and of service value for both accounting and valuation purposes. If the service-life method constitutes a sound basis for the determination of the appropriate annual charge to operating expenses for depreciation, it is an equally sound method of determining the accrued depreciation. Secondly, the Supreme Court has accorded inferential approval to this measure of depreciation under two sets of circumstances. Recognition of the fact that depreciation is inherent in a lack of newness implies the acceptance of the basic assumption of the service-life theory.¹⁹⁸ It should also be noted that the Supreme Court has had occasion to uphold the uniform system of accounts for railroads, in which the Interstate Commerce Commission had prescribed the straight-line method of accounting for depreciation, with particular reference to the handling of depreciation items arising out of the abandonment of a section of right-of-way.¹⁹⁹ Thirdly, the service-life method of calculating depreciation is firmly established in the practice of both federal and state commissions. The Federal Communications Commission specifically requires telephone companies to use the service-life method on a group basis,²⁰⁰ and the Interstate Commerce Commission adopted the straight-line method in its earlier order with respect to the depreciation charges of railroads and telephone companies.²⁰¹ This measure of depreciation also has the approval of the National Association of Railroad and Utilities Commissioners.²⁰² It is also significant that the Interstate Commerce Commission in its valuation of the railroads consistently adhered to the principles of the service-life method of measuring depreciation, supplemented by an engineering inspection of the physical properties.²⁰³ And its example has been followed by other commissions.

In conclusion, there would appear to be no legal obstacles to the adoption of the service-life measure of depreciation for valuation purposes. On the economic side, this standard conforms to the generally accepted theory of depreciation and affords as accurate a measure of the decline in the service capacity and service value of property as it is possible to develop. This is the depreciation policy which is best calculated to safeguard the integrity of the utility's investment and preserve its credit; any practical difficulties encountered in its application are not sufficiently serious to outweigh its patent advantages.

The depreciation reserve as a measure of accrued depreciation. The reserve as a measure of the accrued depreciation may be urged either as a special ap-

¹⁹⁸ *Knoxville v. Knoxville Water Co.*, 212 U.S. 1, 10 (1909); *Minnesota Rate Cases*, 230 U.S. 352, 456 (1913).

Recent evidence that the Supreme Court accepts the principles of the service-life theory of depreciation is to be found in its decision in *Lindheimer v. Illinois Bell Telephone Company*, where the company had followed the straight-line method in the accumulation of its reserves and the Court insisted that the sums accumulated in its reserves constituted persuasive evidence of the adequacy of the annual charges thereafter prescribed by the commission's order. (292 U.S. 151, 167-172 [1934].)

¹⁹⁹ *Kansas City Southern Ry. v. U.S.*, 231 U.S. 423 (1913).

²⁰⁰ *Uniform System of Accounts for Telephone Companies* (1935), p. 23.

²⁰¹ 177 I.C.C. 351, 408, 413.

²⁰² National Association of Railroad and Utilities Commissioners, *Proceedings*, Vol. 51 (1939), p. 342; Public Service Commission of Wisconsin, *Depreciation*, p. 68.

²⁰³ *Texas Midland R.*, 75 I.C.C. 1, 125-130 (1918).

plication of the service-life concept or as the standard which conforms to the previously described accounting concept of depreciation. The depreciation reserve, assuming no improper appropriations from it, represents what the company has charged to past expenses with respect to the depreciation of the property currently in use. However, it is evident that accrued depreciation, the exhaustion of the service capacity of equipment, does not wait on proper accounting entries, and it is therefore pertinent to ask whether the reserve accurately measures the actual depreciation which the property has experienced.

Many circumstances may cause the depreciation reserve to be either less or more than the depreciation which the property has actually sustained. (1) Errors may have occurred in the estimates of service life and salvage value. (2) If depreciation accounting does not date from the beginning of the enterprise and if the annual charges have been adjusted to the currently accruing depreciation, any initial discrepancy in the reserve at the inauguration of depreciation accounting will be perpetuated. (3) Even if the estimates of service life and salvage value are accurate, inadequate maintenance may result in an accelerated rate of depreciation. (4) After proper charges have been made to depreciation expense and to the reserve, faulty accounting may lead to subsequent discrepancies. (5) And though the company seeks diligently to follow sound practices with respect to depreciation accounting, an insufficiency of earnings may make impossible the creation of a reserve commensurate with the actual depreciation.

Considering simply the matter of accuracy, shortcomings do beset the adoption of the depreciation reserve as the measure of accrued depreciation. However, where the reserve has been accurately accumulated, it may be argued that the reserve constitutes a measure to which the company is committed by its past claims with respect to depreciation expenses. And to the extent that the reserve reflects payments by consumers for a specified expense, it may be urged that justice to consumers requires that no lesser sum be taken as the quantum of accrued depreciation. These questions involve matters of policy, however, and may better be postponed until the policies of commissions and courts with respect to the deduction of accrued depreciation are examined.

The reserve requirement as a measure. Since the actual reserve for depreciation is so frequently an inaccurate gauge of accrued depreciation, it has been suggested that the reserve requirement, the sum that the utility should have accumulated, is a possible measure of depreciation. It must be noted that the balance which the reserve *should* contain will almost certainly not coincide with accrued depreciation measured on a service-life basis. Two conditions may be responsible for this discrepancy. First, for any group of items, the expected service life of the surviving items will be in excess of the average service life of the entire group for which the reserve is created. Secondly, the reserve at any given time may have been reduced by the premature retirement of items, though this deficiency will ultimately be made up by depreciation charges against those items continuing in service beyond the average life of the group. Despite these discrepancies, the reserve requirement may be of significance in determining what deduction should be made for accrued depreciation in fixing the rate base.

The inspection method. The inspection method of measuring depreciation is related to either of two of the depreciation theories discussed previously—the immortal-plant theory or the theory that depreciation means only that loss of service capacity which can be observed. Depending on which theory of depreciation is accepted, the objective of the inspection will be to report either (1) the amount of deferred maintenance in the property, (2) the amount of physical deterioration observable, that is, the physical condition of the property in comparison with the same property when new, or (3) the amount of both physical and functional depreciation, that is, the condition of the existing unit in comparison with a comparable modern unit. In general, it may be said that the more vocal supporters of the inspection method think one of the first two objectives—deferred maintenance or observable physical deterioration—should be sought.

No definite and precise procedure characterizes the inspection method. Presumably the estimates are made by competent and experienced valuation engineers, but such has not always been the case. The work may be confined to a relatively crude inspection of so much of the physical property as can be observed and sampled, and the final estimate may rest on the unverifiable judgment of a single individual; or the valuation engineer may supplement an observation of the physical property with an analysis of the experience of this and other companies with the various categories of property. Where the engineer bases his final determination on adequately developed experience records, the method may approximate in practice and in results the service-life measure already described.

Many and serious weaknesses beset the inspection method of measuring accrued depreciation, even in its more highly developed forms. (1) In theory, depreciation proceeds from all those conditions which tend to limit the useful life of productive property. The inspection method, however, tends to narrow the search for depreciation to those aspects of the property which are susceptible of physical identification and measurement. (2) In procedure, the inspection method assumes that it is possible to forecast the remaining useful life of equipment and other property currently in use. As a matter of fact, it is quite impossible to forecast the useful life of most property without resort to the experience tables which are basic to the service-life method. To ask the engineer to forecast the remaining life of a generator, a pole line, or a car, is like asking a doctor to predict that life of an individual; in either instance, if the condition of the property or the individual is critical enough, a forecast of an early end may be possible, but otherwise the prediction based on inspection alone is of little worth. (3) If the engineer bases his estimate of depreciation on experience tables, is not his result at least as accurate as that obtained by adherence to the service-life method? Even this question cannot be answered with an unqualified affirmative, for the engineer is constantly tempted to substitute his judgment, based upon observation, for that of the experience tables, usually in the direction of predicting a longer life on the basis of the physical condition of the property. (4) Finally, there are practical objections to reliance upon an inspection measure of depreciation. First, much of the property of the utility cannot be inspected. Secondly, much of the prop-

erty that can be inspected physically cannot be judged with respect to depreciation.²⁰⁴

Although the weaknesses should lead to its rejection as the *sole* method of determining the accrued depreciation, the inspection method possesses certain important advantages as a *supplement* to the service-life method. In this role, inspection may reveal whether the property has been adequately maintained, and if maintenance has been neglected, it may indicate the presence of more accrued depreciation than would have been found on the basis of life tables alone. Also, an inspection may give important information as to the imminence of premature retirement for functional reasons, and may indicate the necessity of enlarged provisions for the depreciation of particular categories of property.²⁰⁵

ACCRUED DEPRECIATION AND CONFISCATION. The consideration of the treatment of accrued depreciation in valuation proceedings requires that the differences between the problems of the courts and the commissions be kept constantly in mind. The courts, or at least the federal courts under the Fourteenth Amendment, are concerned only with the question of whether confiscation of the utility's property results under the rates prescribed by regulatory authorities. They are not essentially, perhaps not at all, concerned with those questions of expediency and policy that are so inescapable in determining the appropriate policy for commissions to follow.

The formulation of a judicial policy with respect to accrued depreciation did not come until the 1909 decision of the Supreme Court in the *Knoxville Water* case. In that opinion, the Court not only recognized explicitly the right of the utility to include current depreciation charges among its operating expenses, but it also insisted that the utility could not, in challenging the rates prescribed by regulatory authorities, claim a right to earn on any sum in excess of the fair value of the property in its depreciated condition.

"A water plant, with all its additions, begins to depreciate in value from the moment of its use. Before coming to the question of profit at all the company is entitled to earn a sufficient sum annually to provide not only for current repairs but for making good the depreciation and replacing the parts of the property when they come to the end of their life. The company is not bound to see its property gradually waste, without making provision out of earnings for its replacement. It is entitled to see that from earnings the value of the property invested is kept unimpaired, so that at the end of any given term of years the original investment remains as it was at the beginning. It is not only the right of the company to make such a provision, but it is its duty to its bond and stockholders, and, in the case of a public service corporation at

²⁰⁴ This difficulty is illustrated by the now classic example of the 10,000 electric-light bulbs that have been in service for varying periods of time; since an inspection can not reveal their lapsed service life, observation might lead to the conclusion that all, or nearly all, were worth their cost new; yet the actual depreciation would probably approximate 50 per cent. This example seems to have originated with Mr. Charles O. May of Price, Waterhouse & Company, in his testimony before the New York Commission on the Public Service Commissions Law, and is cited by the minority report at page 356.

²⁰⁵ Such a use of the inspection method as is here described would be in conformity with the procedure of the Interstate Commerce Commission in its valuation of the steam railroads. (*Texas Midland R.*, 75 I.C.C. 1, 125-126 [1918].)

least, its plain duty to the public. . . . If, however, a company fails to perform this plain duty and to exact sufficient returns to keep the investment unimpaired, whether this is the result of unwarranted dividends upon over-issues of securities, or of omission to exact proper prices for the output, the fault is its own. When, therefore, a public regulation of its prices comes under question the true value of the property then employed for the purpose of earning a return cannot be enhanced by a consideration of the errors in management which have been committed in the past."²⁰⁶

Though the Court has not always been explicit in its definitions, there is no doubt that accrued depreciation means that "loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of property in the course of service from causes known to be in current operation." It is clear also that the Court is concerned with the value of the plant in its present condition and with the actual depreciation that has been experienced. Such is the proper significance of the statement that "the testimony of competent valuation engineers who examined the property and made estimates in respect of its condition is to be preferred to mere calculations based on averages and assumed probabilities,"²⁰⁷ and, similarly, that "the actual existing depreciation in the plant as compared with a new one,"²⁰⁸ rather than the accumulation in the depreciation reserve is the appropriate measure of the deduction for accrued depreciation.²⁰⁹

Must accrued depreciation be determined and deducted in all findings of the fair-value rate base? The holding of the Court in the *Knoxville* case would seem to indicate so.²¹⁰ The Court's insistence on the *Knoxville* rule has been emphasized when the rate base has been limited to net depreciated value even though the utility's reserve was accumulated on the sinking-fund formula and the commission made no deduction in finding an historical-cost base.²¹¹ Indeed, even when the Court ruled against the lower court in the *Pacific Gas & Electric* case for being unduly harsh where obsolescence had caused sudden re-

²⁰⁶ 212 U.S. 1, 13-14 (1909). The opponents of the deduction of accrued depreciation in the determination of the rate base sometimes object to interpreting the *Knoxville* case as requiring the deduction of accrued depreciation in the normal sense of that term. They support their contention by citing the decision of the Court on the same day, in *Willcox v. Consolidated Gas Co.*, 212 U.S. 19 (1909), where the Court accepted a master's report which made only 2 per cent deduction for deferred maintenance despite the fact that the property was in no sense new and there was evidence that the accrued depreciation amounted to some 14 per cent. On this showing it is argued that the Court referred only to the deduction of deferred maintenance in the *Knoxville* case. However, this interpretation is clearly contrary to the language cited above and to the subsequent decisions which have followed the precedent of the *Knoxville* case, causing that decision to become virtually a rule of law for utility rate cases.

Other decisions in which the Supreme Court clarified its position and affirmed the *Knoxville* doctrine include *La. Railroad Comm. v. Cumberland Tel. & Tel. Co.*, 212 U.S. 414 (1909), *The Minnesota Rate Cases*, 230 U.S. 352, 457-458 (1913), *Des Moines Gas Co. v. Des Moines*, 238 U.S. 153, 162 (1915), *Smith v. Illinois Bell Tel. Co.*, 282 U.S. 113, 158 (1930).

²⁰⁷ *Pacific Gas & E. Co. v. San Francisco*, 265 U.S. 403, 406 (1924); *McCardle v. Indianapolis Water Co.*, 272 U.S. 400, 416 (1926).

²⁰⁸ *Minnesota Rate Cases*, 230 U.S. 352, 457-458 (1913).

²⁰⁹ *Galveston Elec. Co. v. Galveston*, 258 U.S. 388, 395 (1922), *Georgia Ry. & P. Co. v. Comm.*, 262 U.S. 625, 632 (1923), *Bd. of Pub. Utility Commrs. v. N.Y. Tel. Co.*, 271 U.S. 23, 31 (1926).

²¹⁰ *Knoxville v. Knoxville Water Co.*, 212 U.S. 1, 14 (1909). See also *Galveston Elec. Co. v. Galveston*, 258 U.S. 388, 395 (1922); *Georgia Ry. & P. Co. v. Comm.*, 262 U.S. 625, 632 (1923).

²¹¹ *Los Angeles G. & E. Corp. v. Comm.*, 289 U.S. 287, 310-311 (1933).

tirements of serious proportions, it did not hold that the accrued depreciation thus experienced should not be deducted.²¹²

The converse of the deduction rule is the right of the utility to earn on *all* its property used and useful in serving the public, even though some of the property was acquired through the investment of excessive depreciation reserves. Thus consumers may be adversely affected if the utility is permitted unnecessarily large allowances for depreciation. Just how serious the injury to consumers may be is revealed by the *New York Telephone Company* case.²¹³ While this opinion affirmed the right of the utility to property acquired through excessive charges for depreciation, the Court did not overrule its earlier decision that a utility is not entitled to demand a larger return by reason of the investment of funds received for depreciation.²¹⁴

What is the rationale and wisdom of the Supreme Court's *Knoxville* rule that accrued depreciation must be deducted in the determination of the present fair value for testing the confiscatory character of utility rates? In a strict and literal sense, there can be no confiscation of property which is not in existence. The courts are concerned only with preventing confiscation for the future; in reviewing the rate orders of commissions and legislatures, it is not their function to compensate utilities for any confiscation suffered in the past. It is the privilege and duty of the management to protest if charges are confiscatory, but if they have neglected to exercise that privilege in the past, they have no right to ask that the courts enjoin current rates which are not otherwise confiscatory. Another reason for the general requirement that depreciation shall be deducted in arriving at the fair-value base exists, for under the judicial precedents all doubts as to the adequacy of the rates prescribed by legislative authority must be resolved in favor of the legislature or its agent, the commission.

The Supreme Court has not committed itself to any one measure of accrued depreciation. Its pronouncements have been largely negative and have been occasioned by the necessity of rejecting an estimate or measure as improper under the circumstances of the particular case.

It has been said by some that the Court has established as the measure in confiscation cases the observed depreciation revealed by inspection. But certainly the casual statement of preference for the "testimony of competent valuation engineers who examined the property" cannot be said to have established the legal priority of the *inspection* method of determining depreciation.²¹⁵ The well-known tendency to confine inspection to a consideration of only the physical condition of the property, the delusive character of the findings with their varying assumptions, the inability to check and verify the re-

²¹² The Court apparently preferred that the rate base include an appropriate allowance for the value of the patent rights to the new process of producing gas, but it was willing to permit alternatives—the amortization of the undepreciated balance or some other feasible method. (265 U.S. 403, 416 [1924].)

²¹³ 271 U.S. 23, 30–32 (1926).

²¹⁴ *La. Railroad Comm. v. Cumberland Tel. & Tel. Co.*, 212 U.S. 414, 424–425 (1909). Quoted subsequently.

²¹⁵ *McCardle v. Indianapolis Water Co.*, 272 U.S. 400, 416 (1926).

sults, and the fact that the courts have never gone so far as to specify what factors should be considered or how the final estimates should be prepared, all are more than suggestive that the courts are not committed to this measure of depreciation.²¹⁶ Certainly there is no reason to ignore actual depreciation even though it is not perceivable by the trained eye or imagination of the valuation engineer.²¹⁷

What of the service-life or age-life measure of accrued depreciation? To the extent that the Court has been unfriendly to the service-life measure of depreciation,²¹⁸ the criticism has been directed at what may be called a faulty use of the measure. Direct and explicit acceptance of the principles of the service-life approach can be found in other decisions.²¹⁹ From the judicial pronouncements, one may conclude that the measurement of accrued depreciation, like that of other matters pertaining to fair value, must involve a consideration of all the pertinent evidence. Although generalized life tables prepared without reference to the particular utility are suspect, the service-life measure, when it embodies a careful analysis of the experience of the utility, constitutes a thoroughly acceptable and accurate method of estimating accrued depreciation. Certainly the courts will accept this measure when the utility and the regulatory authorities are agreed on the probable life of different categories of property. Further, where the utilities are accounting for depreciation expense on a straight-line basis, it would seem that they have accepted the service-life measure for accrued, as well as for current, depreciation.

Why should the courts not accept the accumulated depreciation reserve as the measure of accrued depreciation? Though it has been observed that the reserve may not conform to the actual depreciation which the property has suffered, would not the cause of equity be served by placing the relations between consumers and company, at least with respect to depreciation, on an accounting basis? ²²⁰ To this question the Supreme Court has returned a negative answer, both when the reserve has been inadequate and when it has been excessive. In the *Knoxville* case, the company had failed to provide adequately for depreciation. In the *New York Telephone Company* case, the situation was reversed, for the company had accumulated reserves in excess of the actual depreciation; nevertheless, the Court refused to sanction a rate reduction which would have left the company with insufficient current revenue to cover all current costs, including the costs of the depreciation currently accruing. According to these principles, the company at its peril fails to accumulate a de-

²¹⁶ There are numerous lower court decisions which have arrived at a rate base with a recognition of only observed depreciation.

²¹⁷ And the closely related notion that accrued depreciation for fair-value purposes is confined to deferred maintenance has no legal support except for a few of the decisions of the inferior courts and a dubious "if any" from Mr. Justice Butler. (*McCardle v. Indianapolis Water Co.*, 272 U.S. 400, 416 [1926].)

²¹⁸ The oft-cited *Pacific Gas and Electric* and the *Indianapolis Water* cases.

²¹⁹ The *Knoxville Water Company*, the *Kansas City Southern*, and the *Minnesota Rate* cases.

²²⁰ It is of course possible that the company may have improperly depleted its reserve, or even that earnings may have been wrongfully diverted to other purposes. Where these or similar circumstances render it unfair to consumers to limit the estimate of accrued depreciation to the book reserve, would it not be appropriate to take the reserve requirement, that is, what the utility should have accumulated, as the quantum to be deducted to find the rate base?

preciation reserve fully equivalent to the accrued depreciation sustained by its plant. And the consuming public, at its peril, permits the utility to accumulate more than the exact amount required to offset such depreciation.

Under certain circumstances, which will be presently discussed, the *Knoxville* rule works a serious injustice to the investors and may threaten consumers with a deterioration in the quality of the service which their utility is able to render. But under *all* circumstances, the precedent of the *New York Telephone Company* case must work the gravest injustice to consumers. It encourages the utility to pad its depreciation expense account in the hope of thereby building up unnecessary reserves to be subsequently transferred to surplus. Certainly the Supreme Court should recognize the inseparable connection between current depreciation and accrued depreciation, between the appropriations for depreciation expense and the sum found in the depreciation reserve, a presumptive measure of the accrued depreciation for rate-making purposes. Such an equitable touchstone seemed to be implicit in the *Cumberland Telephone Company* case, where the Court stated clearly and explicitly that moneys collected for the expense of depreciation, if temporarily invested in additions and betterments, could not become the basis for higher rates and a larger return to the utility.²²¹ The *Knoxville* and *Cumberland Telephone* cases are much more in line with the modern theories of regulation than Mr. Justice Butler's pronouncements in the *New York Telephone Company* case. But in another *New York Telephone Company* case in the district court, there was presented an attempted clarification and distinction, quite in conformity with the equities of the situation, to the effect that if depreciation exists for the purpose of charging operating expenses with its costs, it exists to the same extent to measure the rate base on which consumers should pay a return.²²²

ACCRUED DEPRECIATION AND REASONABLE RATES. It is not possible to lay down any precise rules with respect to the treatment of accrued depreciation by the commissions, for theirs is the function of reconciling the interests of consumers and investors, of weighing the past conduct of the company, and of estimating what future course is best calculated to conserve the interests of consumers, and of investors too.

The argument for the deduction of accrued depreciation. To clarify the problem as it is presented to the commission, the presumed practice of utilities with respect to the accumulation and administration of their depreciation funds may be briefly summarized. (1) Under proper accounting practices, the company charges to depreciation expense currently a sum equal to the decline in the cost value of its depreciable assets during the accounting period. A part

²²¹ "... That it was right to raise more money to pay for depreciation than was actually disbursed for the particular year there can be no doubt, for a reserve is necessary in any business of this kind, and so it might accumulate, but to raise more than money enough for the purpose and place the balance to the credit of capital upon which to pay dividends cannot be proper treatment. . . . We are not considering a case where there are surplus earnings after providing for a depreciation fund, and the surplus is invested in extensions and additions. We can deal with such a case when it arises." (*La. Railroad Comm. v. Cumberland Tel. & Tel. Co.*, 212 U.S. 414, 424-425 [1909].)

The decision in the *New York Telephone Company* case appears a violation of the spirit, if not of the letter, of the earlier and more equitable pronouncement.

²²² *N.Y. Tel. Co. v. Prendergast*, 36 F. (2d) 54, 66 (S.D.N.Y., 1929).

of this expense charge is currently utilized to cover the cost of replacements and the remainder is credited to the depreciation reserve. Under normal circumstances, the balance in the depreciation reserve should equal, approximately, the accrued depreciation present in the items of property in current use. (2) By creating a depreciation reserve, funds of equivalent amount are retained in the business. To the extent that these funds are not immediately required for replacements, they are available to finance additions to the plant and equipment of the company, thus reducing or postponing the necessity of raising new capital through the flotation of additional securities. (3) If and when replacements are required, beyond the amount of the funds currently available through the annual charges for depreciation, they will be financed indirectly through the sale of new securities. The new securities are sold for the purpose of "reimbursing the corporate treasury" for the capital additions previously financed with depreciation funds. The proceeds from the security issue pay for the replacements, but the total capitalization is at no time in excess of the net investment in the assets of the utility, as it would be if no provision were made for depreciation and replacements were financed directly out of the proceeds of new security issues. (4) Under this plan, the failure to deduct for accrued depreciation in arriving at the rate base would be unfair to consumers. They have provided, in the payment of depreciation expense, the funds with which net capital additions have been financed, and if the original investment is included in the rate base at its undepreciated amount, they will pay a full return on the original investment, *plus* a return on the net capital additions acquired through the temporary investment of the depreciation reserve, *plus*, in all probability, an allowance for the depreciation currently accruing on those net capital additions. The only exception to this procedure would arise where the sinking-fund method is followed, in which event the earnings on the invested reserve do not accrue to the benefit of the investors but are segregated as an additional credit to the depreciation reserve, thereby making possible a corresponding reduction in the sums which consumers have to pay in the form of depreciation expense.²²³

The relations just described constitute the real argument for the deduction of accrued depreciation by the public utilities commissions. Other arguments are sometimes marshaled to this end, but they are of limited validity. Deduction is sometimes demanded as a penalty for a company's failure to provide an adequate reserve, and perhaps punitive considerations are cogent if the company with sufficient earnings failed to provide for depreciation or having created the reserve, permitted it to be diverted to improper purposes; but, as will be shown shortly, the mere failure of the utility to provide a full depreciation reserve is not even *prima facie* evidence that the company has been derelict in its duty toward either consumers or investors. To argue that depreciation should be deducted because the depreciated property is less valuable would be pertinent only if the rate base were the commercial value of the property. Or, again, it is said that depreciation should be deducted because there has been

²²³ For a fuller treatment of the matters here summarized reference may be had to the discussion of depreciation accounting, Chapters VIII, Sec. 5, and depreciation expense, Chapter XVII, Sec. 4.

a withdrawal of a part of the original investment; to which the proper answer is usually that the assertion is contrary to the facts; however, if there had been a partial withdrawal of the investment—that is, if some of their capital had actually been returned to investors—the argument would be relevant. To repeat, the real purpose of deducting accrued depreciation is to deal justly with consumers, who would otherwise be required to pay a continuing return on the payments they had previously made to operating expenses.

The arguments against any deduction of accrued depreciation. The arguments that march to the opposite goal, that accrued depreciation should never be deducted in arriving at the rate base, are more numerous than convincing, and since most of them have been previously met and dismissed, they need only be listed. (1) The contention that the utility plant as a whole has an indefinite life, even if true, would not be significant. (2) That there is no lessening in the quality of service which the old plant affords, assuming adequate maintenance, is perhaps true, but irrelevant. (3) That investment in utility property would be discouraged by the deduction of accrued depreciation is likely only if the company fails to make, or is prevented from making, adequate provision for depreciation out of its earnings. (4) The one ever-valid argument against the deduction of accrued depreciation is the provision for depreciation on a sinking-fund basis in conformance with commission-prescribed accounting practices.

An equitable rule for accrued depreciation. An equitable rule for the treatment of accrued depreciation by the commissions does not lend itself to simple and concise statement. Equitable treatment will reflect the circumstances of the particular case: the size of the reserve, the past history of the corporation, the past policy of the commission, and the probable consequences of alternative treatments. These factors may be discussed with relation to eight situations.

(1) The normal case. Where the utility has been able to make adequate provision for depreciation and the balance in the reserve is an approximate index of the amount of accrued depreciation, the commission should deduct the amount of the reserve in arriving at its rate base. Deduction will permit the utility to earn a fair return on the full investment, but it will not permit charging consumers a return on capital additions financed through payments made for depreciation expense.

(2) Where the reserve is inadequate because the company's earnings were insufficient. Insufficient earnings may result from the imposition of unduly low rates by the commission, or they may be due to the voluntary maintenance of rates which were inadequate to cover the full cost of the service. In the former situation, it would be quite unfair to penalize the company for the mistake of the commission, even though the company might not have sought an injunction against the continuance of the noncompensatory rates. If the commission insists upon a deduction in such circumstances, there is every likelihood that the credit of the company may be impaired, that the cost of capital may be increased, and that the quality of service which the company is able to render will deteriorate; a failure of the commission to follow an equitable rule would redound to the ultimate injury of the consumers. Even if the com-

pany has voluntarily charged rates insufficient to cover the full cost of service, including the accruing depreciation, there has not necessarily been any failure in duty to the public such as would justify the enforced and permanent impairment of the company's investment.²²⁴ The management may have set low promotional rates in order to encourage the fuller utilization of the service, making possible a reduction in the unit costs of service—a policy ultimately benefiting consumers and investors alike. In any event, as between the company and the consumers, the consumers have paid less than the full cost of their service; here an equitable rule does not require the deduction of accrued depreciation in excess of the reserve which the company has been able to accumulate.

(3) Where the depreciation reserve is inadequate to care for unexpected and unpredictable depreciation. It is probably true that the protection of investors and consumers alike dictates that managements should be encouraged to anticipate, where possible, the accrual of functional depreciation.²²⁵ However, if the company has failed to anticipate the premature retirement of certain units, there is nothing improper in permitting the amortization of the undepreciated balance out of the future earnings, if this is possible without increasing charges to consumers or continuing rates that are otherwise unfair to consumers. Usually the premature retirement of property is occasioned by changes that permit the utility to secure certain savings in costs, so that it will be possible to provide for amortization without increasing rates; in effect, consumers are burdened only to the extent that a possible reduction in rates is postponed. Sometimes, however, premature retirements result from changing public requirements, such as the elimination of grade crossings or the placing of overhead wires underground, and there are no corresponding savings out of which amortization payments can be financed. Where changes and improvements not economically advantageous to the company are required, there are two fair ways of handling the costs: they may be amortized out of utility revenues even though an increase in rates is required, if the change is primarily for the benefit of consumers; or part or all of the costs may be paid from tax revenues, if the benefits accrue principally to the general public as distinct from consumers. Certainly where the utility has adhered to depreciation charges which have had the formal or implied approval of the commission, the company should not thereafter be prejudiced if its reserve is inadequate to cover functional depreciation.

(4) Where the reserve is inadequate because depreciation accounting has only recently been substituted for retirement accounting. In the past, many utilities have followed retirement accounting for depreciation, with the sanction or at least without the disapproval of their commissions. Whether the utility is continuing with retirement accounting or has shifted to depreciation

²²⁴ At most there might be some question of the propriety of shifting to future consumers the costs which, under correct accounting principles, should have been borne by past consumers.

²²⁵ This proposition does not command the unanimous support of regulatory officials, and in a few instances, they, as well as the managements of utilities, have questioned the wisdom of attempting to charge in advance for the costs of obsolescence and inadequacy. To such effect is the strong statement of Chairman Balch, Michigan Public Utilities Commission, in *Re Michigan Bell Telephone Co.*, 10 P.U.R. (N.S.) 149, 177-178, 181-182 (1935).

accounting, as is now required in the more progressive jurisdictions, it should be recognized that the utility cannot properly be penalized by deducting any sum in excess of its depreciation reserve.

(5) Where the reserve is inadequate although past earnings would have permitted the accumulation of a full reserve. If the utility has had past earnings sufficient to pay a fair return to investors and to accumulate a depreciation reserve, but has dissipated these earnings through the payment of extravagant dividends or otherwise, it must be recognized that the management is responsible for the improper financial policy, and the full amount of accrued depreciation should be deducted. In effect, the investors have received dividends which were a partial return of their capital and they must now admit the reduction of their investment. This policy is certainly a practical one where the utility's balance sheet shows an earned surplus, for an adequate depreciation reserve can be created by a charge against that surplus. But if the utility has no surplus—that is, if the capitalization is in excess of the rate base after deduction for accrued depreciation—there is every likelihood that consumers will be injured. If no deduction is made, then consumers are required to pay more than a fair return to the company. If a deduction is made, consumers are harmed to the extent that the poorer investment standing of the utility's securities increases the cost of capital and the rate of return, or prevents the utility from raising such new capital as adequate service standards would require.

(6) Where the depreciation reserve is in excess of the actual depreciation. This is the most difficult situation in which to do justice to consumers if the utility insists on its apparent legal right to limit the deduction to the actual depreciation. The discussion of the judicial rules with respect to the deduction of accrued depreciation have revealed where the rule of equity would lead. The utility has claimed depreciation expense to the extent of building up an excessive reserve and has collected from consumers accordingly; it should not thereafter be permitted to impugn the accuracy of its own accounts. The effect of the deduction of the full reserve does not prevent the utility from receiving a full return on its total investment; it simply prevents the utility from charging consumers to provide capital and then demanding a return on the consumer-provided capital.²²⁶ There should be an indissoluble link between depreciation expense and the estimate of accrued depreciation.

(7) Where there is offsetting appreciation. It is sometimes urged that no depreciation should be deducted if there is offsetting appreciation. This argument is usually advanced where, for one reason or another, the utility's reserve is inadequate. There is nothing in the fact that there has been appreciation in the value of the utility's assets that is pertinent to the treatment of accrued depreciation.

(8) Where the reserve is accumulated on a sinking-fund basis. This is the simplest situation of all for companies and regulatory authorities. The com-

²²⁶ Note that this is a different question from that of including in the inventory property which has been acquired through the reinvestment of earnings, even if those earnings were excessive. In that situation, the utility has not misrepresented its costs and thereby secured higher charges. Cf. Sec. 2, above.

missions are unanimous in recognizing that the principles of the sinking-fund method require that there shall be no deduction for accrued depreciation. The discussion of depreciation accounting has revealed that the nondeduction of the sinking-fund reserve imposes no additional cost on consumers.

7. WORKING CAPITAL

ITS NATURE AND COMPOSITION. Working capital consists of that capital, above the investment in fixed assets and intangibles, which is necessary for the economical and satisfactory conduct of the enterprise. Working capital, in the technical sense in which it is here employed, does not include the total liquid funds with which the business is conducted. It is not the property which the business *has*; that is, it is not the excess of current assets over current liabilities. Working capital, rather, is an allowance for the sum which the company *needs to supply from its own funds* for the purpose of enabling it to meet its current obligations as they arise and to operate economically and efficiently.

Cash and materials and supplies are the principal components of working capital. Cash is required to bridge the gap between expenditures for the production of the service and the receipt of payment from consumers. It is required for the payment of current bills, for wages and salaries and for incidental outlays. A reasonable bank balance is requisite for these purposes as well as to meet possible emergencies.

Materials and supplies fall into two categories. There are the necessary supplies for the production of the service—fuel, lubricants, and the other raw materials used in the manufacture of the utility's product. Furthermore, the utility requires a stock of materials sufficient to enable it to make promptly such repairs as are essential to minimize interruptions to the service.

In terms of the balance-sheet accounts of the utility, evidence of the company's working capital requirements can be found in such accounts as cash, receivables, materials and supplies, and prepayments for such items as rents, insurance, and taxes.

THE SOURCES OF WORKING FUNDS. The funds with which the utility carries on its operations are derived from four sources: from investors, either directly as proceeds from the sale of securities or indirectly from the reinvestment of corporate earnings; from credits extended to the utility in the normal course of business; from unapplied funds earmarked in depreciation and other reserves; and from bank borrowings. So far as rate regulation is concerned, an allowance need be made only for that working capital which is supplied by investors. There is always a certain amount of credit extended to the utility when it purchases materials and supplies; and the utility has the advantage of such short-term credit with no cost to it, for the custom of the trade makes such transaction the equivalent of cash transactions. To the extent that consumers have paid in operating expenses for the accumulation of depreciation reserves, there are funds available for any lawful corporate purpose until required to finance retirements. Similar in all respects to such reserves are the customers' deposits which are required by some utilities. The fourth source of working funds is bank credit. While a utility will not usually depend upon bank borrowings to

supply its working funds, there is no objection to resorting to bank loans to meet unusual cash requirements; indeed, in such circumstances, temporary bank borrowings may be distinctly more economical than continuously maintaining cash balances in excess of the normal requirements.

WORKING CAPITAL AS PART OF THE RATE BASE. The legal status of working capital rests on accepted usage by commissions and courts rather than on formal precedents emanating from the Supreme Court. Indeed, in only two decisions of the Court is there a discussion of working capital.²²⁷ Despite this relative neglect by the highest court, a consideration of working capital comes into nearly every rate case, and in the large majority of instances an allowance is made therefore. It may be said that there is no dispute as to the propriety of including working capital in the rate base; the differences of opinion concern the appropriate amount of the allowance.

THE DETERMINATION OF THE PROPER ALLOWANCE. The general principles controlling the amount of the allowance for working capital can be stated briefly. The purpose of the allowance is to compensate for the capital which investors have contributed to enable the company to operate efficiently and economically. No sums which have not been contributed by investors and no sums which are not essential to the economical operation of the business are entitled to inclusion. Finally, the allowance need not equal the maximum sum which the company might conceivably require to meet emergency conditions; it is both possible and proper for a utility to plan to meet extraordinary requirements through temporary borrowings.

The appropriate allowance for working capital bears no uniform and stable relation to either the total investment of the utility or to its total operating expenses. The requisite amount will depend upon the advance payments that have to be made and the period for which they are customarily carried. This quantum can be determined only from an analysis of items comparable to the following:

(1) The time required to produce and sell the service or product. An independent manufacturing gas utility would require a more ample working capital than a local distributing company that purchased its gas requirements wholesale.

(2) The nature of the utility, whether supplying a product or a service.

(3) The relative importance of labor costs. Other things being equal, the smaller the labor force, the smaller the funds required to meet payrolls and salaries.

(4) The rate of utility growth. A growing utility would require a larger allowance for materials and supplies, if it did not require a larger cash allow-

²²⁷ In *Ohio Utilities Co. v. Comm.*, 267 U.S. 359, 363 (1925), Mr. Justice Sutherland commented on a reduction of the working capital allowance from \$4,198.42 (one-twelfth of annual operating expenses plus cost of coal for one month) to \$2,882: "The item for working capital was carefully worked out by the commission's own engineers; there was no evidence to the contrary; and the reduction seems to have been equally capricious." In *McCardle v. Indianapolis Water Co.*, 272 U.S. 400, 412 (1926), Mr. Justice Butler cited lower court gas cases in discussing the appropriate allowance for a water company. In most of the cases that have been carried to the Supreme Court, the allowance (or the absence of allowance) for working capital has been accepted without significant comment.

ance. A relatively large proportion of new units would be subject to minor repairs during the breaking-in stage.²²⁸

(5) The billing practice of the utility, whether monthly or quarterly, whether prior or subsequent to the rendition of the service. In general, the shorter the interval between the rendition of the service and the payment therefor, the smaller need be the allowance for working capital.

(6) The collection experience of the company. Obviously, where collections are prompt there is a corresponding saving in working capital requirements.

(7) The custom of payment with respect to utility purchases. Many utilities receive short-term credit extensions on their purchases without thereby incurring any additional cost; in paying at the end of ten or thirty days, the company purchases on what is, in effect, a cash basis. To the extent that such credit is available, the gap between payment for purchases and collections for service is reduced.

(8) The conditions in the supply industries. The stocks which the utility must carry will depend upon the promptness with which its orders are filled and the availability of reliable and rapid transportation.

In brief, working capital is a practical conception and should be concretely established from the company's books in the light of the actual circumstances of its operations.

Proof of the requisite working capital is usually submitted by the utility in the form of the balances appearing in certain accounts. The balances on valuation date are usually not accepted as a satisfactory showing of requirements, since those balances may reflect unusual conditions or may even constitute a bit of window dressing. It is customary to calculate working capital requirements on the basis of the average conditions prevailing over several months or even years.

The balance-sheet accounts which show a positive need for working capital are cash and deposits, accounts receivable, materials and supplies, and prepayments for rents, insurance, taxes, et cetera.

(1) Cash and bank deposits are required to meet bills payable, the payrolls, and other expenses. But the total of cash and bank deposits cannot be accepted as essential. Some of the cash may represent funds derived from the sale of securities and held for construction purposes; or the deposits may be inflated because the company is accumulating funds for the payment of bond interest or dividends. Also the mere holding of unnecessary idle funds must not be permitted to increase the allowance for working capital.

(2) Accounts receivable reflect the investment which the utility has made in supplying consumers with services for which payment has not yet been forthcoming. It is the receivables item which is most frequently accepted erroneously at its full amount by regulatory bodies. The amount which the utility has advanced in supplying service to consumers is the *cost* of the service to the company, not the *price* at which it is billed to consumers.²²⁹

²²⁸ The larger stocks that the utility would find necessary in order to provide promptly for new consumers would not be a part of its working capital, since the cost of carrying materials and supplies for capital additions is covered in the overhead allowance for interest during construction.

²²⁹ *Re Los Angeles G & E. Corp.*, P.U.R. 1931A, 132, 145 (Cal., 1930).

(3) The materials and supplies account must also be subjected to critical scrutiny before its balance can be accepted for inclusion in the working capital allowance. The inclusion of materials and supplies is justified because it is necessary for the company to carry a stock of repair parts so that undue interruptions to service can be avoided. But the same materials that are required for minor replacements and repairs are also available for extensions, and inasmuch as interest during construction is allowed on all fixed capital, there would be duplication if those materials which are held in stock for capital extensions were included in working capital. The second constituent of materials and supplies is the stocks of raw materials used in the production of the utility service, the most typical being coal or other fuel and lubricants.

(4) The last group of balance-sheet accounts furnishing evidence of working capital requirements consists of the prepayments—prepayments of rents, insurance, taxes, and like items. Such payments in advance increase the working capital requirements.

The utility is not entitled to an allowance for working capital equal to the adjusted balances of the four categories of accounts—cash and deposits, accounts receivable, materials and supplies, and prepayments—just described. The permissible allowance for working capital is only the net difference between the aggregate of these accounts and the total credit which is extended to the utility in the form of current liabilities. This second group of accounts includes accounts payable, accrued wages and salaries, taxes accrued, interest accrued, customers' deposits, and reserves.

(1) There is some difference of opinion as to whether accounts payable should be deducted from the positive working capital requirements. The principle is clear. If the utility is able to postpone payment for purchases until consumers have paid for the service which occasioned the purchases, the working capital requirements of the company are correspondingly smaller.

(2) If there are accrued wages and salaries, the utility has had the benefit of services contributed by its staff without payment therefor. The revenues from these expenditures are reflected in the accounts receivable and in the payments which consumers have made for services; in other words, on the assumption that the utility has paid them, these expenses have already swelled the positive indicia of working capital requirements, and if accrued wages and salaries were not deducted, the utility would be permitted to claim an allowance for expenses that have not fallen on it.

(3 and 4) Taxes accrued and interest accrued are analogous to accrued wages and salaries.

(5) Customers' deposits are not required by all utilities of all customers. But where customers' deposits have created a cash fund available for the benefit of the corporation, it would be manifestly improper not to recognize this fact in calculating the utility's working capital.

(6) Reserves are accumulated for a variety of purposes. To some extent, the reserves are created out of funds otherwise available for distribution to security holders, such as a reserve for the maintenance of a regular dividend policy; such reserves do not enter into the present calculation. Other reserves are provided out of charges against the operating expenses of the utility, such as

reserves for damages and insurance or the reserve for depreciation. As accumulation of these latter reserves makes funds temporarily available, the utility has a source of working assets without cost to its investors.

It is quite misleading to attempt to indicate the magnitude of the allowances which commissions and courts have made for working capital. For the most part, the allowance is such a small increment of the total rate base that it is often passed over without critical consideration. In most of the rate cases, the allowance for working capital would probably fall between 2 and 5 per cent of the total investment. However, there is little significance in a statement of working capital as a function of the total investment. It is more enlightening to express the allowance as a function of the total operating expenses; and on this basis, the working capital allowances are commonly equivalent to 1 to 3 months' operating expenses.

8. REPRODUCTION COST NEW AND REPRODUCTION COST LESS DEPRECIATION

The final determination of the reproduction-cost estimates is merely a matter of combining the allowances which have been heretofore discussed in detail. Reproduction cost new is the sum of the allowances made for (1) physical property other than land, (2) the present fair value of land, (3) the aggregate of the overheads, (4) the sum of the intangibles, and (5) the working capital requirements. The cost of reproduction less depreciation is the above sum less the deductions from gross value. These two estimates of reproduction cost are not themselves the rate base; they are two "elements of value" that are considered by the courts and the commissions in arriving at their respective judgments of the proper rate bases for testing the confiscatory character of rates or for establishing a scale of reasonable charges.

THE PRESENT-VALUE SYNTHESIS: THE PRACTICES OF THE JUDICIARY AND THE COMMISSIONS

1. THE SYNTHESIS

The determination of the various elements or measures of value does not directly indicate the rate base upon which the utility's net earnings are calculated. The determination of the final value requires a synthesis or interpretation of all the evidences of value that have been presented.

The evidences of value may vary greatly from one case to another. The principal evidence will normally consist of figures purporting to state the actual cost of the property, its reproduction cost, and the amount of the accrued depreciation. Indeed, there may be several estimates with respect to each of these magnitudes, estimates varying widely in response to different findings with respect to the content of the used and useful property of the utility company and with differing assumptions with respect to the calculation of unit prices, land values, overheads, and intangibles. Other evidences of value will include the capitalization of the corporation and the prices at which its outstanding securities have sold on the securities markets.

The multiplication of evidence, especially on the basis of conflicting assumptions as to the considerations which control the finding of value, is one of the by-products of the process of judicial review. Where there is any probability of an appeal to the courts, the company is under the necessity of introducing not only that evidence which is acceptable to the commission, judged by the past precedents of that body, but also all evidence that is considered significant either in securing a review by the courts or in influencing the courts' judgment. The necessity for this multiplication of evidence arises from the fact that neither the legislatures, the commissions, nor the courts have explicitly defined the process by which the fair-value rate base is to be determined.

2. THE PRACTICE OF THE FEDERAL JUDICIARY

The practices of the courts will be considered only with reference to the federal judiciary. The practices of the state courts exhibit variations which are significant only with respect to the problems of the particular state, and which are, in general, the result of peculiarities in the statute law rather than of divergent principles of regulation.

The fundamental principles of rate regulation and valuation for the federal judiciary have been established in the decisions of the Supreme Court. Yet the Supreme Court has never made a valuation of a utility property nor established directly the rate which a utility should charge. Its function has been limited to ruling as to errors of law in the determinations of the lower courts and to

judging whether lower courts and commissions have made findings based upon a consideration of relevant evidence. Most of the Court's conclusions are couched in such vague language as: "the value of its property actually used for the public, the total value fixed by the court below is, as we have seen, much too large,"¹ "we think the proof shows that for the purposes of the present case the valuation should be at least \$25,000,000,"² "the Company has failed to sustain its attack upon the rate base of \$65,500,000,"³ or "we are unable to conclude that there was not adequate evidence to sustain a finding that the total property used and useful, after making deductions for the portions not of that sort, was worth not more than \$750,000."⁴

The development, modifications, and present status of the fair-value rule have been elaborated with particular reference to the Supreme Court in Chapter XI, and what was said there need not be summarized here. A detailed analysis of the determination of original cost and reproduction cost, with a description of the calculation of depreciation, has been presented because these "evidences of value" have received primary emphasis in the proceedings before both courts and commissions. In the process of preparing valuations, original cost has sometimes been indeterminate, and "historical cost" as an estimate of original cost has received attention in some cases; and in other cases, evidence of "prudent investment" has been introduced.⁵ Of the other "measures of value" only the capitalization, or the par value of the outstanding securities, has received passing attention, and then only where long-continued regulation of security issues has created a confidence in the validity of such evidence as a measure of the security holders' contribution.

Despite the concentration of attention on two lines of evidence as to the value of utility properties, the courts have developed no system of weighting that would permit precision in translating the evidences of value into a final single-sum value, the rate base. As Mr. Justice Hughes remarked in *The Minnesota Rate Cases*, "The ascertainment of that value is not controlled by artificial rules. It is not a matter of formulas, but there must be a reasonable judgment having its basis in a proper consideration of all relevant facts."⁶ This attitude is basic to the present-fair-value principle. Thus the requirement that in ascertaining fair value the present as compared with the original cost of construction must be considered "does not mean that the original cost or the present cost or some figure arbitrarily chosen between these two is to be taken as the measure. The weight to be given to such cost figures and other items or classes of evidence is to be determined in the light of the facts of the case in hand."⁷

It is the very essence of present value that it is a judgment valuation. The Court, in its emphasis on this fact, has retained for itself a freedom of decision that permits a consideration of each case on its individual merits and allows

¹ *Willcox v. Consolidated Gas Co.*, 212 U.S. 19, 50 (1909).

² *Southwestern Bell Tel. Co. v. Comm.*, 262 U.S. 276, 288 (1923).

³ *Los Angeles G. & E. Corp. v. Comm.*, 289 U.S. 287, 319 (1933).

⁴ *United Gas Pub. Serv. Co. v. Texas*, 303 U.S. 123, 144 (1938).

⁵ The prudent-investment rate base is discussed at length in Chapter XVII.

⁶ 230 U.S. 352, 434 (1913).

⁷ *McCardle v. Indianapolis Water Co.*, 272 U.S. 400, 410 (1926).

ample scope for adjustment of its findings to the economic exigencies of the time. And the courts need carry their inquiries no further than necessary to discover whether the company has been fairly treated. However, such freedom of action creates a large element of uncertainty and undoubtedly is productive of more litigation than would prevail if the Court should announce and adhere to a precise formula. Of course, the counterpart of the fluidity of the judicial process is, or should be, an invitation to freedom of action by the legislatures and commissions.

The Supreme Court has been more willing to make definite negative commitments with respect to present value than to subscribe to positive standards. Quite early in its review of rates established by state authority, the Supreme Court asserted that fair value was not necessarily equivalent to original cost. In these early cases, the rejection of original cost as a rate base certainly reflected both the absence and the unreliability of corporate records as to the actual cost of their properties, and a distrust of the fairness of the costs actually incurred. But even later, when original costs would have been more favorable to the consuming public (and adequate to meet the interest and dividend requirements on the company's outstanding securities), and when accounting records gave promise of greater reliability in actual-cost determinations, the Court continued to reject cost as a sole measure of the utility's right to a return. More recently the Supreme Court has been willing to uphold rates prescribed by commissions on the basis of historical cost.⁸

Similarly, the Supreme Court has held that fair value is not necessarily equivalent to reproduction cost. The issue was presented to the Court directly in the *Georgia Railway & Power Company* case, where the utility contended that the rule for the valuation of physical property was "reproduction cost at the time of the inquiry, less depreciation." The majority, speaking through Mr. Justice Brandeis dismissed the contention—"The refusal of the Commission and of the lower court to hold that, for rate-making purposes, the physical properties of a utility must be valued at the replacement cost, less depreciation, was clearly correct."⁹ This fact requires stressing in view of a tendency to interpret the emphasis on present costs in *McCardle v. Indianapolis Water Company* as authority for the elevation of reproduction cost into a dominant standard,¹⁰ a tendency which has been particularly conspicuous in some decisions of certain lower federal courts.¹¹

In summary, it may be said that the Court seeks to base its conclusions on the present value of the property. In some cases, present value may approximate the actual or historical cost of the property. In other cases, reproduction cost may appear to be a more accurate measure. Any valuation which ignores or departs widely from a standard of present prices is in danger of judicial dis-

⁸ *Los Angeles G. & E. Corp. v. Comm.*, 289 U.S. 287 (1933); *Clark's Ferry Bridge Co. v. Pub. Serv. Comm.*, 291 U.S. 227 (1934); *Railroad Comm. v. Pacific Gas & Electric Co.*, 302 U.S. 388, 398 (1938).

⁹ 262 U.S. 625, 629, 630 (1923).

¹⁰ 272 U.S. 400 (1926).

¹¹ *Monroe G. L. & F. Co. v. Comm.*, 292 Fed. 139 (E.D. Mich., 1923); 11 F. (2d) 319 (E.D. Mich., 1926); *Springfield G. & E. Co. v. Comm.*, 10 F. (2d) 252 (W.D. Mo., 1925); *Pacific Tel. & Tel. Co. v. Whitcomb*, 12 F. (2d) 279 (W.D. Wash., 1926).

approval.¹² The present condition of the property will always be considered, the determination of accrued depreciation, like other determinations in the fair-value process, being a matter of judgment not circumscribed by definite rules. It is only infrequently that the Court goes beyond the evidence of original cost and reproduction cost to consider other elements of value, and when it does so, that evidence is likely to be the capitalization of the company; but the par value of outstanding securities is significant evidence only when such capitalization accurately measures the contribution which security holders have made to the enterprise. In some instances, the Court has rejected all the evidence of fair value as leading to conclusions "at war with realities."¹³

With the development of more critical standards in the regulation of utility accounts and security issues, there is the likelihood that the cost measures of value will receive more favorable judicial consideration. Such changes in the procedure for testing confiscation would be quite in the fair-value tradition.

3. THE PRACTICES OF COMMISSIONS

THE COMMON RATE-CASE PROCEDURE. The procedure which commissions adopt for the disposition of rate cases is determined by the statutory requirements under which they operate, the interpretations which they place on relevant judicial precedents, and the adequacy and competence of their staffs. The prescription of the procedure which commissions shall follow is primarily the responsibility of the legislatures. But commonly the statutes are silent on the methods of rate regulation, confining their pronouncements to describing the procedural steps required by due process of law (adequate notice, full hearings, and orders supported by relevant evidence), and to defining the standard to be sought, as "reasonable and nondiscriminatory rates and charges." The judicial precedents, where they are not restricted to procedural questions, are primarily concerned with whether rates are confiscatory rather than with whether they are reasonable. In consequence, commissions are largely free to develop their own procedures for the determination of reasonable charges.

Rate regulation, especially the valuation of extensive properties, is extremely costly. Hence, valuations have been an infrequent aspect of commission practice in most states. Although the power to make valuations is presumably incidental to the power to establish reasonable rates, some thirty-seven states have made specific statutory provision with reference thereto.¹⁴ In most states, however, the statutory authorization is permissive, awaiting fulfillment on the provision of adequate appropriations. In fact, only a few utility companies have ever had their properties valued; and most of the valuations that have been made have not thereafter been kept up to date. In a large proportion of instances, commissions have reached their conclusions as to the rate base on evi-

¹² *Southwestern Bell Tel. Co. v. Comm.*, 262 U.S. 276, 287-288 (1923); *Bluefield W. W. & Imp. Co. v. W. Va.*, 262 U.S. 679, 689 (1923).

¹³ *Landheimer v. Illinois Bell Tel. Co.*, 292 U.S. 151, 163-164 (1934).

¹⁴ The states where such authorization is not specific include Connecticut, Delaware (no commission), Florida, Iowa, Louisiana, Massachusetts, Minnesota, Mississippi, Nebraska, New Hampshire, New Mexico, and South Dakota.

dence presented by the company, on materials prepared by public officials or other chance representatives of the consumers, and on the findings developed in earlier proceedings.

STANDARDS FOR THE RATE BASE. The state commissions have divided into three groups with respect to rate-base standards. The large majority of commissions have been overpersuaded into an acceptance of what they have believed to be the valuation methods of the courts. A smaller group of states have at one time or another declared their adherence to prudent-investment principles, but all except California tended to fall away from that standard during the 1920's. While Massachusetts has proclaimed itself an exponent of the prudent-investment method, the commissions of that state during most of their years have followed a highly individual procedure growing out of that state's long-continued regulation of security issues.

The fair-value states. Most commissions have been unduly deferential to the precedents established by the federal courts in testing the confiscatory character of rates. A subsequent critical analysis of the fair-value practice will reveal that its methods are not well adapted to the problems and responsibilities of the commission, and that adherence to this procedure has deprived the public of that independent contribution to the solution of regulatory problems which the commissions could have supplied.

In the interpretation of the evidence of value, as in its development, there have been wide variations in practice even before the same commission. The predominant element in the fixing of the final fair value has differed with the adequacy of the evidence, the bias of the commission, the expectations with respect to future economic developments, and the commission's understanding of the current attitude of the judiciary. In his separate opinion in the *Southwestern Bell Telephone Company* case, Mr. Justice Brandeis presented a summary analysis of the predominant element in the determination of the rate base in 363 commission cases reported in the *Public Utilities Reports* from 1920 to March 1, 1923:

"In 5 cases: Reproduction cost at unit prices prevailing at the date of the valuation.

"In 28 cases: Reproduction cost at unit prices prevailing at some date, or the averages of some period, prior to the date of the valuation.

"In 12 cases: Reproduction cost at unit prices prevailing at some date not specifically stated.

"In 22 cases: Reproduction cost of an inventory of a prior date at prices prevailing at that date or prior thereto, plus subsequent additions at actual cost (so-called split inventory method).

"In 3 cases: Reproduction cost on basis of future predicted prices (so-called trend prices, or new plateau method).

"In 102 cases: A prior valuation by the commission plus the actual cost of subsequent additions.

"In 85 cases: The actual original cost (including both initial cost and additions).

"In 6 cases: Original cost arbitrarily appreciated.

"In 27 cases: The historical cost or prudent investment.

• "In 28 cases: Book cost or investment.

• "In 12 cases: Bond and stock capitalization.

• "In 36 cases: Determination and classification of method impossible."¹⁵

In the absence of regulatory control over accounting and security issues, the early cases reveal a distrust of book cost and capitalization; the commissions were, therefore, driven to place chief reliance upon cost-of-reproduction figures. Rising prices after the turn of the century, and especially after the beginning of the first World War, brought insistent pressure from utilities for continued adherence to reproduction cost as the principal measure of their right to earnings. On the other hand, increasing reliability of book records accompanying the extension of commission jurisdiction over accounts, combined with a reluctance to undergo the delay and expense involved in reproduction-cost appraisals, and aided no doubt by a distrust of the exaggerated claims which the companies submitted in the name of reproduction cost, caused many commissions during the second decade of the century to place increasing emphasis on actual-cost figures. The preference for actual cost finally gave way before the judicial decisions of the 1920's, which emphasized the new and higher plateau of prices and the appositeness of reproduction cost to measure present values. The downward movement of prices following the depression of the 1930's has removed some of the pressure for reproduction cost, and many of the state commissions have exhibited anew their preference for a cost standard.

Even in the application of the fair-value method it is conceivable that commissions might have developed fairly definite formulae and procedures for the translation of the evidences of value into the final rate base. This development, however, was prevented by the fear of judicial reversal. The Court's standard of fair value was so vague that even those commissions that wished to subscribe to its principles were uncertain whether their determinations were not in some respect in conflict with the judicial precedents. As a consequence, commissions sought to conceal, rather than to clarify, the particular process by which their final rate base was determined, and exploited the notion that fair value was a judgment concept.¹⁶ A commission customarily concludes its discussion of the evidences of fair value with a generalization, or "blanket" statement, to the effect that, having considered all of the evidences of value and accorded to each its appropriate weight in the light of the particular circumstances of the case, it is its judgment that the fair value of the utility's property, used and useful in the public service, is (or is not) in excess of a specified sum, which is thereby adopted as the rate base.

Some state commissions, in the early 1920's, adopted a compromise device which has become known as the split-inventory method. The procedure involved taking prewar property at prewar costs (or perhaps, a valuation in an earlier rate case), plus property subsequently acquired at its actual cost, plus land at its present value. This was also substantially the base adopted by the Interstate Commerce Commission in the *O'Fallon* case. The split-inventory has been criticized by the Supreme Court in some cases and accepted in others.

¹⁵ 262 U.S. 276, 301-302 (1923).

¹⁶ This state of mind is perfectly illustrated in *Re Chesapeake & P. Tel. Co.*, P.U.R. 1916C, 925, 944-946 (Md., 1916).

The prudent-investment states. A subsequent chapter devoted to a consideration of the alternatives to present fair value includes a discussion of the theory and practice of the prudent-investment method. For the present, it may be noted that although some eleven state commissions have at one time or another announced themselves as favoring prudent investment, only California has consistently adhered to this standard in its regulation of rates.¹⁷

Massachusetts. Massachusetts was one of the first states to develop public utility regulation. In contrast to other states, Massachusetts has always been active in the control of security issues, and this has resulted in the development of a distinctive program of rate regulation. While the methods of regulation applied in Massachusetts could probably not be adopted immediately by all states, a study of Massachusetts' experience throws significant light on certain general principles of security and rate regulation. The analysis is in three stages: a consideration of the assertion that Massachusetts regulation is an exemplification of the prudent-investment principle, a description of the practice followed by the Massachusetts commissions in their regulation of utility earnings, and an appraisal of the economic validity of this program.¹⁸

(1) Is Massachusetts an exponent of prudent investment? The literature of regulation contains many references to Massachusetts as a prominent example of the successful application of the prudent-investment principle.¹⁹ The statements, official and otherwise, of the Massachusetts commissions have frequently so described their regulatory practices:

"This Commonwealth has been the pioneer in the regulation of public utilities. It has controlled the issue of securities and their price for decades and, as a consequence, has proceeded upon the theory that these securities thus issued constitute the proper base. Stated tersely, it is the money honestly and prudently invested and devoted to the public service that is entitled to earn a fair return."²⁰ However, such statements do not supply a completely satisfactory answer.

The historical origins of the Massachusetts regulatory program are to be found in the long-established policy of controlling the amount and the issue price of all utility securities. But although the regulation of security issues of railroads and gas and electric utilities dates from the middle of the nineteenth century, it was not until the Middlesex and Boston decision in 1914, that the Massachusetts rule was formulated. At that time and subsequently there has

¹⁷ Chapter XVII, Sec. 1.

¹⁸ For a detailed study of the Massachusetts program of regulation, see the author's *Public Utility Control in Massachusetts*, and "The Challenge of the Massachusetts Commission," 4 *Public Utilities Fortnightly* 540-551, 596-609 (Oct. 31 and Nov. 14, 1929).

¹⁹ The separate opinion of Mr. Justice Brandeis in *Southwestern Bell Tel. Co. v. Comm.*, 262 U.S. 276, 301 *et seq.* (1923); concurring opinion of Commissioner Eastman in *Excess Income of St. Louis & O'Fallon Ry Co.*, 124 I.C.C. 3, 49-59 (1927); Nash, *The Economics of Public Utilities*, p. 168; Whitten and Wilcox, *Valuation of Public Service Corporations*, I, 306-322.

²⁰ *Re N. E. Tel. & Tel. Co.*, P.U.R. 1925E, 739, 744 (1925). For other similar expressions, see *Middlesex & Boston Rate Case*, 2 Ann. Rep. Mass. P.S.C. 99, 111-112 (1914); *Railroad Passenger Rate Case*, 3 Ann. Rep. Mass. P.S.C. 3, 4 (1915); *Bay State Rate Case*, P.U.R. 1916F, 221, 234 (Mass., 1916). See also Commissioner Goldberg, "The Massachusetts Proposals for Public Control," *Proceedings of the Academy of Political Science*, May, 1930, p. 102.

been an attempt to give to the Massachusetts program an appearance of venerableness which is belied by the history of its development.²¹

It should be noted that the financial position of many Massachusetts utilities was in some respects quite unusual. There had been no appreciable stock-watering among Massachusetts utilities subsequent to 1870. The amount of capital stock was rigidly limited to the sum necessary to raise the capital required to conduct the business. When market conditions permitted, securities were issued at a premium, thereby further restricting the par value of the issue.²² And finally, utility companies have been encouraged to provide for capital expansion through reinvestment of their earnings.²³ The combined result of these policies is that the investment in the fixed capital of the successful utilities is frequently much in excess of the capitalization of the corporation. In view of this situation, what has been the concrete meaning attached to "prudent investment"?

The term "prudent investment" is ordinarily employed in one of two senses. It may be used as synonymous with the actual cost of the property to the utility, less any reserves that have been accumulated out of earnings. Or it may be defined in terms of the investment which security holders have made. In the latter sense, it includes not only the direct payments which security holders have made into the corporate treasury, that is, the par value of the securities plus any paid-in premiums,²⁴ but also the indirect contribution in the form of the reinvestment of earnings otherwise available for distribution to stockholders. Both of these definitions have the support of usage and authority.²⁵ Have the Massachusetts commissions accepted either of these definitions of "prudent investment"?

Massachusetts commissions have not accepted the actual cost of the utility's property as the "prudent investment." They have not only consistently refused to permit the capitalization of reinvested surplus, but they have even

²¹ In *Re Lowell Gas Light Co.*, 22 P.U.R. (N.S.) 138 (1937), at pages 151 and 152, the present Commission quoted from a 1933 decision:

"Since 1804 (Stat. 1804, chap. 125), when regulation of rates applicable to turnpikes was first undertaken, down to the present day, capital honestly and prudently invested in a public utility has uniformly been taken, both by the legislature and by Commissions, as a guide in determining the reasonable rates to be charged."

While there were certain early hints that public service companies were entitled to a return on their invested capitals (3 Ann. Rep. Mass. G. & E. L. C. 68-69 [1887] and, 36 Ann. Rep. Mass. R.C. 19 [1904]), these were sporadic statements without significant influence upon the later development of the so-called Massachusetts "rule." It was the *Middlesex & Boston Rate Case* that afforded the first considerable discussion of the basis upon which the fair return should be calculated.

²² *Public Utility Control in Massachusetts*, Chapter II.

²³ *Ibid.*, 133-138.

²⁴ If the security has been sold at a discount, the investment is the price paid by the purchaser of the security.

²⁵ Mr. Justice Brandeis has stated that prudent investment is "in effect" the same as historical cost, which he defines as "the amount which normally should have been paid for all the property which is usefully devoted to the public service." (*Southwestern Bell Tel. Co. v. Comm.*, 262 U.S. 276, 294, footnote 6 [1923].) In the New York bill, the most carefully formulated program for the application of the prudent-investment principle, prudent investment is defined in terms of the total investment in the property, not only the sums actually paid in by the investors for their securities, but also the reinvestment of any earnings that would have been available for distribution as dividends. (*Report of Commission on the Revision of the Public Service Commissions Law*, New York Legislative document No. 75 [1930], pp. 415-417.)

held that consumers have an "interest" in the property created out of surplus and that no return need be provided thereon,²⁶ although it has been said that the reinvestment of earnings justifies a higher rate of return than would otherwise be permitted.²⁷ In the application of this policy no distinction has been made between the reinvestment of normal earnings that might justifiably be paid to stockholders as dividends and the reinvestment of excessive earnings.²⁸

In several decisions the Massachusetts commissions have referred to the paid-in capital, the par value of outstanding securities plus the paid-in premiums, as the measure of the utility's right to earnings. This seems to have been the preference of the present commission since its reconstitution in 1919.²⁹

In other cases, these commissions seem to have forgotten that premiums represent contributions by stockholders, and have referred to the aggregate par value of the outstanding securities as the measure of the prudent investment. This appears to have been the concept employed by the earlier Public Service Commission in the period when the Massachusetts "rule" was formulated. In the *Middlesex & Boston* case, the Commission indicated that this definition was predicated on the assumption of equivalence between the investment in, and the capitalization of, the utility.³⁰ The fact is, however, that the Massachusetts program of security regulation, combined with the encouragement of liberal reinvestment of earnings, has tended to prevent that coincidence of investment and capitalization that would support this definition of "prudent investment."³¹

As an aid to understanding the Massachusetts program of rate regulation, the discussion of the commissions' concepts of prudent investment is largely academic, for the Massachusetts commissions have only rarely attempted a

²⁶ *East Boston Petition*, 9 Ann. Rep. Mass. G. & E. L. C. 9-11, (1893); *Haverhill Petition*, 16 Ann. Rep. Mass. G. & E. L. C. 9, 10-11 (1900); *Beverly Petition*, 26 Ann. Rep. Mass. G. & E. L. C. 15, 18 (1910); *Re United Electric Light Co.*, P.U.R. 1917E, 868, 872 (1917); *Bay State Rate Case*, P.U.R. 1916F, 221 (1916); *Re Worcester Elec. L. Co.*, P.U.R. 1927C, 705, 708 (1927).

²⁷ *Haverhill Gas L. Co.*, 28 Ann. Rep. Mass. G. & E. L. C. 41, 58 (1912); *Saugus v. Lynn Gas & E. Co.*, 2 P.U.R. (N.S.) 433, 437 (1934).

²⁸ See *Federated Civic Clubs v. Springfield St. Ry. Co.*, P.U.R. 1925A, 127, 131-132 (1924).

This attitude incurred the disapproval of the Supreme Judicial Court in the *Fall River Gas Works* case in 1913. This issue is discussed at length in *Public Utility Control in Massachusetts*, pp. 23, 133-138, 216. As there noted, there is reason to believe that the Massachusetts commissions have usually been sufficiently liberal so that companies have generally succeeded in earning a fair return on their entire investment from whatever source derived.

²⁹ *Customers v. Worcester Elec. L. Co.*, P.U.R. 1927C, 705 (1927); *Re Cambridge Elec. L. Co.*, P.U.R. 1928C, 24 (1928); *Saugus v. Lynn Gas & E. Co.*, 2 P.U.R. (N.S.) 433 (1934); *Marlborough v. Marlborough Elec. Co.*, 4 P.U.R. (N.S.) 86 (1934); *Gloucester v. Gloucester Elec. Co.*, 4 P.U.R. (N.S.) 342 (1934).

³⁰ 2 Ann. Rep. Mass. P.S.C. 99, 111 (1914).

³¹ The usual exception to the acceptance of outstanding securities as the measure of the investment is floating indebtedness that has been issued without commission approval; the commissions have properly reserved the right to pass upon such expenditures. In certain post-depression decisions, where the present commission has referred to the "value" of the property as being not less than the par value of the outstanding securities, neglecting considerable paid-in premiums, it is probable that the reference reflected the pressure of public opposition to proposed or existing rates. (*Re Boston Consol. Gas Co.*, 12 P.U.R. [N.S.] 113, 127 [1936]; *Re Lowell Gas L. Co.*, 22 P.U.R. [N.S.] 139, 152 [1937]; *Re Boston Consol. Gas Co.*, 30 P.U.R. [N.S.] 260, 271 [1939].)

In some of the recent cases the representatives of the public, municipalities and others, have presented reproduction cost and other estimates of "value." These the commission has "considered" but there is no indication of what influence, if any, these studies had on the final result.

definite finding of the "prudent investment" as a step in the establishment of utility rates. In the decisions of the present Massachusetts commission rates have not been prescribed on a strictly defined base, either the par value of outstanding securities or that sum plus the premiums paid in.³² In the latter respect, as in others previously noted, the Massachusetts procedure has not conformed to the generally accepted pattern of a prudent-investment program.³³

(2) Its actual procedure in the regulation of rates. The procedure developed by the Massachusetts commissions for the regulation of rates is an outgrowth of the control over capitalizations and security issues. The establishment of utility rates requires the consideration of four magnitudes: operating expenses, taxes, depreciation expense, and a fair return upon the property or the investment. With respect to the first three constituents, Massachusetts practice differs in no essential from that of other commissions. It is in the determination of the fair return that Massachusetts is unique.

In calculating the fair return, the Massachusetts commissions have not proceeded to the preliminary determination of a rate base, either prudent investment or otherwise. The fair return consists of bond interest, preferred dividends and common-stock dividends. If the securities have been issued under commission supervision and if the proceeds have been spent as approved, there is good reason to accept these securities at their par value, or at their issue price if they were issued above par, as evidence of investment. With respect to the bonds and preferred stocks, the contractual interest and dividend rates

³² *Public Utility Control in Massachusetts*, pp. 143-152.

³³ This conclusion in an earlier study by the author has been questioned in certain studies of regulation in Massachusetts, but an examination of the criticisms and a re-examination of the case record has only served to confirm this earlier judgment as to the character of the Massachusetts regulatory program. See Mason, *The Street Railway in Massachusetts*, pp. 148-160.

And if a voice from within the commission is not inappropriate, the statement of Commissioner Henry G. Wells, in reply to some remarks in an address by Mr. William A. Prendergast of New York, may be quoted:

"... Whatever may be the opinion of different individuals as to whether prudent investment is a proper rate basis or not, since the consolidation of the departments in Massachusetts in 1919 the Commission has not considered prudent investment as the Massachusetts theory. I am not at all surprised that the general public throughout the country has felt that that was the Massachusetts theory, that the Massachusetts theory on which rates were based was prudent investment. It grew up out of a decision before the consolidation a great many years ago in a street railway case where there had been a depreciation in the value of the property. The representatives of the public attempted to set up as a rate basis upon which the rates on that street railway should be figured, the reproduction cost theory, which was manifestly less than was indicated as prudent investment.

"The Commission fixed the rates—the old Public Service Commission fixed the rates on prudent investment because they felt that the stockholders had honestly and prudently invested their money in the property, and the fact that the value of that property was less than that prudent investment was of no moment. That is the origin of the so-called 'Massachusetts rule' of prudent investment, and as you can see it arises from an entirely different conception than is usually held. In other words, the doctrine of prudent investment as the Massachusetts theory is quoted is opposed to reproduction cost theory where the reproduction cost is more than the prudent investment; whereas the only decision in Massachusetts was based on the fact that the prudent investment was more than the reproduction cost." (*Proceedings of the National Association of Railroad and Utilities Commissioners* [1927], pp. 113-114.)

The testimony of Chairman Atwill and Commissioner Goldberg before the New York Commission on the Revision of the Public Service Commissions Law led to a similar conclusion by Mr. William J. Donovan, counsel for the commission. (New York, Legislative Document [1930] No. 75, page 97; also, *Hearings*, pp. 1522-1671.)

have been accepted as indicative of the company's revenue requirements therefor.

The earnings requirements for the common stock have been complicated by the fact that Massachusetts utilities have long been required to issue and sell common stock at a premium when market conditions permitted. Another statutory provision stipulates that new capital stock shall be issued at not less than par, and compliance with this policy would require that the company be allowed sufficient earnings to permit the payment of such dividends as would suffice to maintain the market value of the utility's capital stock at or above par. But if the utility is required by commission order to issue new shares at a premium, the issue price creates what is, in effect, a new equitable par, for if the commission has required the issuance of stock at a premium it cannot thereafter refuse to acknowledge the reasonableness of dividends sufficient to maintain the market price at that premium.³⁴ Under less favorable economic circumstances, the Commission has spoken of earnings sufficient to attract new capital at a price at least as high as the average book investment per share.³⁵

In summary, the Massachusetts plan involves a determination of the revenue requirements of the utility in terms of the operating expenses, taxes, depreciation expense, and a fair return on the investment. The fair return on the investment consists of the contractual interest and dividends on any bonds and preferred stocks. The appropriate earnings for the common-stock investment are estimated in terms of the dividends that have to be paid to keep the market price of the stock equal to the last price at which the Commission has required the stock to be sold to investors (or perhaps at the average price at which stock has been sold to security holders). The *minimum* dividends might perhaps be such as would suffice to maintain the market price of the stock at, or just above, par.³⁶

Here and there in the Massachusetts decisions are to be found occasional references to "value" and to "fair value."³⁷ These statements, however, should not be interpreted as involving an acceptance of the "fair value" method of rate regulation. For the most part these expressions are simply "consideration" of evidence of value presented by parties to the proceedings or an instance of "lip-service" to the "controlling federal doctrine."³⁸

(3) The economic validity of the Massachusetts program. What conclu-

³⁴ This is explicitly stated in *Re Edison Electric Illuminating Company of Boston*:

"... we are confident that the present rates, modified only to the extent required by our order, will enable the company to pay dividends, after proper allowances for depreciation, which will maintain the market value of its stock at, at least, \$215 a share, the highest price at which, acting under our statutes, we or our predecessors have required it to be offered to stockholders."

The company had increased its dividend rate from \$12 to \$13.60 per share. The Commission ordered a rate reduction which it thought would permit the continuance of the \$12 dividend. (P.U.R. 1930E, 200, 201 [1930].)

³⁵ *Lawrence v. Lawrence Gas & E. Co.*, 15 P.U.R. (N.S.) 353, 356-357 (1936).

³⁶ *Public Utility Control in Massachusetts*, Chapter IV.

³⁷ *Sangus v. Lynn Gas & E. Co.*, 2 P.U.R. (N.S.) 433 (1934); *Re Boston Consol. Gas. Co.*, 12 P.U.R. (N.S.) 113 (1936); 30 P.U.R. (N.S.) 260, 264 (1939).

³⁸ See particularly *Customers v. Worcester Elec. L. Co.*, P.U.R. 1927C, 705, 713-715 (1927), and *Re Cambridge Elec. L. Co.*, P.U.R. 1928C, 24 (Mass., 1928).

sions should be drawn as to the advantages and disadvantages of the Massachusetts program to investors and consumers?

In recording the advantages of the Massachusetts program of control it must be noted that some of the benefits are attributable to the control of securities rather than to the particular scheme of rate regulation. (1) The Massachusetts commissions have possessed one great advantage in comparison with commissions following the valuation procedure in the speed with which they are enabled to dispose of rate cases. Where important rate cases in other jurisdictions sometimes drag their weary way through a year or more, the Massachusetts commissions habitually conclude their rate cases in a month or two. (2) The liberal attitude which the commissions have adopted with respect to earnings and depreciation provisions has encouraged utility managements to follow conservative financial policies. Capitalizations are generally low; a substantial part of the capital requirements have been met through the reinvestment of earnings; and most of the utilities have been in a position to obtain new capital on favorable terms. (3) A third commendable feature is the relation of the fair return to the capital structure of the utility. Instead of permitting a blanket return, which often gives extravagant allowances to the common stockholders, the Massachusetts method measures the fair return by direct reference to the requirements of the company.

Offsetting these advantages are certain disadvantages. (1) The most serious fault lies in the indefiniteness of the procedure; in the lack of a definite measure of the rights of investors. In general, neither the amount of the requisite return nor the manner of its determination is stated with sufficient explicitness to permit consumers and others to judge whether existing rates are reasonable or more than reasonable. (2) A second objection centers in the subordination of consumer interests to investor interests, which is implicit in testing the fair return by the dividends required to maintain the market price of the stock. (3) Finally, it may be noted that the effect of the law requiring the sale of new security issues at a premium may be prejudicial to consumers. The approval of an issue price above par creates in effect a new par for the purpose of the regulating of utility earnings. The commissions have hesitated to impose rate reductions which would enforce a lower dividend rate than is thought necessary to maintain the market price of the stock at the level which was fixed in a commission order approving an issue of securities.⁸⁹

In conclusion, it must be said that the Massachusetts program exhibits certain features which are superior to the procedures followed in other states. In other respects, the practices there developed seem to expose the consumer to unfair treatment. Certainly the Massachusetts program is not capable of being adopted *in toto* by other jurisdictions which lack its long history of control over security issues and accounts. Nevertheless, Massachusetts practices are suggestive of reforms that would tend to make regulation more generally effective.

THE VALUATIONS OF THE INTERSTATE COMMERCE COMMISSION. The valuation work of the Interstate Commerce Commission has been carried out under the

⁸⁹ *Report of the Special Commission on Control and Conduct of Public Utilities*, Mass. House doc. No. 1200 of 1930, p. 57.

Valuation Act of 1913, in the administration of the recapture clause of the Transportation Act of 1920, and in the regulation of the general level of railroad rates.⁴⁰

In its early reports under the Valuation Act of 1913, the Commission did not attempt to arrive at a single-sum final value figure.⁴¹ The first final valuation was made in the *Evansville & Indianapolis Railroad* case in 1922.⁴² The first discussion of the methods of arriving at the final-value figure is found in the *San Pedro* case in 1923,⁴³ but beyond the statement that no separate allowance would be made for appreciation or for going value, no explanation was forthcoming other than that the valuation was based "upon a careful consideration of all of the relevant facts that have come to our attention."⁴⁴ This failure to provide an explicit description of their procedure was criticized by a number of commissioners in separate opinions, and was excused by Chairman Meyer on the ground that if an analysis of the process by which the commissioners collectively arrived at a final-value figure were required no valuation report would ever be issued, for it was "arrived at by different processes by the different members constituting the majority."⁴⁵

Is there any consistent relation between the evidences of value and the final-value figures which the Commission has reported? It has been suggested that a consistent pattern can be read into these valuation decisions. Thus it has been found that the final valuation for most of the roads approximates the cost of reproduction less depreciation, plus the present value of carrier lands, plus 5 per cent, this total being carried to the next higher or lower round figure, plus an allowance for working capital.⁴⁶ Though some exceptions to this so-called "five per cent rule" are found, they are not numerous. In some instances, the departures from the "rule" are apparently dictated by expediency, such as a desire to report a valuation equal to certain underlying security issues.

The Valuation Act of 1913 provided that the Commission should, "in like manner" keep itself informed of changes in the condition and value of the property of the carriers,⁴⁷ and the Commission in its earlier reports stated its intention to bring the valuations up to a current date. However, fuller experience developed many misgivings as to the practicability of bringing the valuations up to date "in like manner." The valuation technique was said to be cumbersome, reappraisals of lands would be required, and the preparation of new reproduction-cost estimates would be time-consuming; in short, the Commission reported to Congress that adherence to such procedure would result in the valuations always being greatly in arrears and consequently of little practical use. For many years, however, Congress remained indifferent to requests for a change in the statutory provisions with respect to the revision of the original valuations, which were as of an average date of 1916.

⁴⁰ Valuations for the latter purposes have been of limited significance, both because general rate level cases are infrequent and because competition between railroads and other transportation instruments has not made it possible to establish railroad rates to yield a fair return on the fair value of the property.

⁴¹ *Texas Midland R.*, 75 I.C.C. 1, 5-7 (1918); *Kansas City So. Ry. Co.*, 75 I.C.C. 223, 229 (1919).

⁴² 75 I.C.C. 443.

⁴⁴ *Ibid.*, 513.

⁴³ *San Pedro, Los Angeles & Salt Lake R. Co.*, 75 I.C.C., 463.

⁴⁵ *Ibid.*, 592.

⁴⁶ Vanderblue and Burgess, *Railroads*, pp. 347-350.

⁴⁷ Sec. 19a.

The administration of the recapture clause of the Transportation Act of 1920 afforded the occasion for the Commission to formulate its own method of revising the original valuations. The method and its implications were fully discussed in *Excess Income of St. Louis & O'Fallon Railway Company*.⁴⁸ The carrier presented the book record of its investment and an estimate of value—the reproduction cost of its property other than land, plus the value of carrier lands as shown in the original valuation, plus working capital. The carrier's claims as to value were rejected and the majority arrived at its own valuations by a process which Commissioner Hall described as follows:

"In order to determine the value of the O'Fallon property devoted to carrier service during the recapture periods . . . we start with a valuation or inventory date of June 30, 1919. The units in existence on that date are known. As to the man-made units we estimate the cost of reproducing them in their condition on that date and in so doing apply to the units installed prior to June 30, 1914, the unit prices of 1914, representing a fairly consistent price level for the preceding 5 or 10 years. To like units, installed after June 30, 1914, and prior to June 30, 1919, we apply the same prices, but add a sum representing price increases on those units during that period. For the third period, from June 30, 1919, down to each recapture date, we abandon estimate and turn to recorded net cost of additions less retirements. On this composite, made up of estimated value for two periods and ascertained net cost for the third period, the majority base a conclusion as to value at recapture date of the man-made items. Land goes in at its current value as measured by that of neighboring lands."⁴⁹

On appeal to the Supreme Court, the Commission was overruled on the ground that the rate base did not conform to the statutory standard established by Congress, namely, that "due consideration" be given "to all the elements of value recognized by the law of the land for rate-making purposes." In the majority's opinion, the Commission had failed to give "due consideration" to reproduction cost as one of the "elements of value recognized by the law of the land."⁵⁰

Following its setback in the *O'Fallon* case, the Commission recommended to Congress the enactment of a statutory rule for the determination of the rate-making value of carrier properties. Its proposals were crystallized in a bill which had as its primary purpose the revision of the rule of rate making contained in Section 15a, of the Transportation Act of 1920. The formula proposed would have defined the rate base as follows:

⁴⁸ 124 I.C.C. 3-74 (1927).

⁴⁹ *Ibid.*, 60. The opinions of Commissioners Meyer and Eastman presented a carefully reasoned argument supporting the majority's valuation practice as conforming to the legal requirements governing valuation and recapture and as meeting the economic standards of sound rate regulation. Indeed, these opinions went beyond the necessities of the case in elaborating the reasons for believing that a reproduction-cost base would be disastrous for carriers and the shipping public, and in stating that unless full weight be given current reproduction cost, there was no way, other than that implicit in the method adopted by the Commission, whereby weight could be given to current reproduction cost without relying upon mere caprice.

⁵⁰ *St. Louis & O'Fallon Ry. Co. v. U.S.*, 279 U.S. 461, 484 (1929). Mr. Justice McReynolds delivered the majority opinion, with Mr. Chief Justice Taft and Justices Van Devanter, Sutherland, and Sanford concurring. Justices Brandeis, Stone, and Holmes, in dissent, vigorously upheld the Commission. Mr. Justice Butler did not participate in the decision.

The cost of reproduction new of properties, other than land, owned by the carrier on the original valuation date,

Plus, the value of carrier lands as reported in the Commission's original valuation,

Plus (or minus) the net increase (or decrease) on account of changes in the properties, as properly recorded in the investment account,

Less, the depreciation reserve.⁵¹

As the law was finally amended in 1933, the formula for the determination of the rate base was omitted, but there were significant changes in the instructions concerning the revision of the original valuations. The Commission is simply instructed to keep itself informed as to any changes in the property of the carriers, and of the cost of all additions and of all changes in their investment; and permissive authorization is given to keep informed of current changes in the costs and values of railroad properties in order that it may be prepared at all times to revise and correct its valuations.⁵² In compliance with this provision, the Commission maintains continuous inventories and records which enable its Bureau of Valuation, "on short notice, to produce the standard elements of value, including original cost, reproduction cost new, reproduction cost less depreciation, land values, working capital, and corporate and financial information of individual carriers or of systems of railroads, and for designated rate districts or other groupings."⁵³ The repeal of the recapture clause and the change in the rule of rate making have removed the congressional mandate to determine the value of the carriers after "due consideration to all the elements of value recognized by the law of the land."⁵⁴ The new rule of rate making contains no reference to the value of the carriers' properties.⁵⁵ It would seem, therefore, that the Commission is free to adopt its own method of determining the rate base, or fair value, for carrier properties, within the limits set by the Supreme Court's interpretation of the requirements of due process.

4. IN CONCLUSION

The final stage in the determination of the present-value rate base, the synthesis of the various elements or evidences of value, might be expected to reveal the courts and the commissions developing different rules and procedures for the determination of the standard for testing whether rates are

⁵¹ For a discussion of the matter at length, see the letter of the Commission to the Chairman of the Senate Committee on Interstate Commerce, January 21, 1931. (55 Ann. Rep. I.C.C. 347-364 [1931].)

⁵² Interstate Commerce Act, Sec. 19a (f). Act of June 16, 1933, C. 91, Title II, Secs. 207-208, 48 Stat. 221.

⁵³ 50th Ann. Rep. I.C.C. 103 (1936).

⁵⁴ Sec. 15a (4) stricken from the act by Act of June 16, 1933, C. 91, Title II, Sec. 201, 48 Stat. 220.

⁵⁵ Sec. 15a (2).

"In the exercise of its power to prescribe just and reasonable rates the commission shall give due consideration, among other factors, to the effect of rates on the movement of traffic; to the need, in the public interest, of adequate and efficient railway transportation service at the lowest cost consistent with the furnishing of such service; and to the need of revenues sufficient to enable the carriers, under honest, economical, and efficient management, to provide such service." (Sec. 205.)

confiscatory or reasonable, respectively. Yet a study of the work of the courts and the commissions shows each body following much the same procedure despite the different character of the tasks which they confront.

The fair-value rule was developed by the courts in reviewing the constitutionality of the rates prescribed by legislative or commission authority. It has been the stated policy of the judiciary to place a heavy burden of proof on any party that would contest the validity of the action of another co-ordinate branch of the government and to resolve all doubts in favor of the constitutionality of the governmental action challenged. It is not, therefore, altogether inappropriate that the courts should refuse to be committed to precisely and previously defined formulas. Insistence that the determination of fair value is a matter calling for the exercise of judgment in the light of all the relevant evidence has permitted the courts to conduct such investigations and reach such conclusions as were just and fair in the circumstances of each individual case.

The public service commissions, with one or two notable exceptions, have followed the example of the judiciary in holding that the determination of the rate base calls for the exercise of judgment and a consideration of all the circumstances of the case. But unfortunately, the task of the commissions in the establishment of reasonable rates cannot be satisfactorily performed with such an ill-defined and vague rate base. Neither the courts nor the legislatures have afforded significant assistance in the development of an effective administrative procedure, and the commissions have been regrettably timid in departing from their conception of the *Smyth v. Ames* rule. Yet reasonably clear guiding principles, and perhaps even general formulas, are essential to the efficient functioning of the commissions, both to enable the commission to confine the presentation of the evidence to matters which are precisely relevant, and to permit a rational weighing of evidence that differs in its relative importance where it is not definitely conflicting.⁵⁶ The commissions have not shown that independence and initiative in contributing to the solution of the problems of rate control which the public might expect from a body of expert public servants trained by experience in their highly specialized and important tasks of regulation.

⁵⁶ A "judgment" as to the fair-value base must be "arbitrary" when there is nothing in the nature of the evidence, in the absence of a definitely accepted formula, which would lead reasonable men to reach the same conclusion from a consideration of the same evidence.

THE RATE OF RETURN

1. THE SIGNIFICANCE OF THE RATE OF RETURN

A DEFINITION. The "rate of return" is that percentage of the "rate base" which the utility is entitled to earn for interest, dividend payments, and related requirements. The product of the rate base and the rate of return is the "return" or the "fair return," which is the residual amount remaining after operating expenses, taxes, and depreciation expenses have been deducted from gross earnings.

ITS FUNCTION. In rate regulation, the rate of return is co-equal with the rate base in determining the fair return to which the utility is entitled. From the point of view of the regulatory authorities and the consumer, the fair return performs the function of paying a current cost of the service. It also performs another, and perhaps a more important, function—that of determining the conditions on which the utility will be able to secure such additional capital as is needed.

ITS IMPORTANCE.¹ The proper determination of the rate of return is of primary importance. It is critical not only in affording equitable treatment to present investors, not only in making possible the most economical rendition of the service in the long run by keeping capital costs at a minimum, but also in protecting consumers' interest in a fair price for the present service. The quantitative importance of the rate of return is often overlooked. If it be assumed that 6 per cent is the fair rate of return, the allowance of an additional 1 per cent is the equivalent of a $16\frac{2}{3}$ per cent increase in the rate base. Refinements in the valuation of the property and the determination of the rate base are meaningless unless equal precision is exercised in finding the fair rate of return.²

¹ Despite its importance, the rate of return has been relatively neglected both in the case literature and in the economic and legal writings on the regulation of public utilities. Most commission and court decisions have disposed of the rate of return with a brief paragraph or two; most general texts, like the present one, accord it only a chapter. There is the admirable monograph by N. L. Smith, *The Fair Rate of Return in Public Utility Regulation*. Recently the Federal Communications Commission has published two excellent short studies by its Telephone Rate and Research Department prepared under the direction of Carl I. Wheat: *Factors Underlying the "Rate of Return" in Public Utility Regulation, as Disclosed in Court and Commission Decisions* (June 1, 1938), and *The Problem of the "Rate of Return" in Public Utility Regulation with Special Reference to the Long Lines Department of the American Telephone and Telegraph Company* (June 15, 1938).

² The quantitative importance of the rate of return may be expressed in pecuniary terms. For the year 1938, the total assets of the electric utilities amounted to \$17,220,617,262, and the total utility operating revenues to \$2,548,532,153, the ratio of book value of assets to income being 6.7 to 1. Operating expenses, depreciation, and taxes aggregated \$1,802,214,039 or 70.7 per cent, leaving 29.3 per cent of gross revenues, or \$746,318,114, as the net operating revenues or the fair return. (Federal Power Commission, *Statistics of Electric Utilities in the United States*, 1938, pp. x and xi.) The composite rate of return would therefore be 4.3+ per cent. An allowance of a 5 per cent rate of return on the book value of total assets would have raised the fair return to \$861,030,863, an increase of \$114,712,149 or more than 15 per cent; the increase in charges to consumers would approximate 4.5 per cent.

ECONOMIC COMPOSITION OF THE RATE OF RETURN. *The explicit content.* The income of the utility remaining after the payment of operating expenses, depreciation, and taxes, constitutes a fund out of which payments are made to those who have supplied the capital of the corporation. *Interest* payments are made to the holders of bonds and debentures and to the banks or others who may have extended short-terms loans. The *dividend* payments to both preferred and common stockholders constitute a similar payment for capital presumably supplied to the corporation. But these payments do not cover the entire cost of capital. There are also the *discounts* that may have been incurred in the issue of either bonds or stocks, and that must be amortized. And finally, there are the *costs of marketing* the utility's securities: the underwriting fees, the selling commissions, the costs of the certificates, the legal costs of preparing mortgage indentures, the fees payable to trustees and transfer agents, the costs of registering securities with governmental agencies, the expenses of listing the securities on the exchanges and any tax payments incidental to the issuance of securities. Explicitly, then, the fair return is the source from which interest, dividends, discount, and marketing and analogous costs of issuing securities, are paid.

The implicit content. What is the composition of the rate of return from the point of view of the economist? As the economist sees it, the rate of return consists of payments for three kinds of service: payments for the supply of capital funds, for the assumption of risks, and for the rendition of personal services. The basic element in the rate of return is the *interest* payment for the supply of capital funds. This is not to be identified with the explicit contractual interest payments which the corporation makes to bondholders and banks. Rather, it is a sum implicit in the payments to all who have supplied capital, to stockholders as well as to holders of bonds and notes. It differs from the explicit interest payments also in that it is the *risk-free* payment for the use of capital funds. The rates of interest of the capital markets are all more or less composite rates, including a payment for risk as well as for the use of the capital. The pure interest rate, the risk-free rate, must therefore be imputed from such evidence as the market affords. It is generally assumed that the theoretical pure interest rate is approached, if not sometimes equaled, by the market yields on the best governmental and corporate bonds.³

The second element in the economic analysis of the rate of return is the payment for the assumption of *risks*. This is a payment that must be made because the interest and dividend requirements may not be earned and paid, and because even the principal of the investment may be lost or suffer diminution. In the prices at which securities sell on the securities markets and in the yields resulting therefrom, the payment for risk is merged with the payment of interest. Indeed, the differences in market interest rates are largely to be explained in terms of differences in the risks attending various employments of money. The risks of the enterprise are not distributed uniformly among all

³ It should be said that the extremely low rates at which governmental notes have been sold in depression years does not indicate that the pure interest rate on long-term loans was equally low. The differences between the yields on long-term government bonds and short-term Treasury notes indicates that investors were unwilling to make long-term commitments for such low interest rates.

who supply capital to the undertaking. The largest risks are borne by the common stockholders whose right to income is contingent upon prior payments to bondholders and preferred stockholders and whose capital contribution constitutes a cushion protecting the senior securities from an impairment of their investment. The dividend and interest payments that must be offered to induce investment in the various categories of utility securities are proportional to the risk involved.

The final element of the return consists of various *payments for services* associated with the raising of capital and marketing of securities.

It is sometimes argued that the rate of return should contain an element of reward for management. In the modern corporation, however, there is seldom any provision for translating a higher rate of profit into a payment to the management, and even when this is effected through a "bonus arrangement," there is seldom a functional relation between the "reward" and management's "responsibility" for the additional income. No useful purpose is served by regarding "reward to management" as a part of the rate of return.⁴

The utility corporation raises its capital funds in a competitive market. This is a fact that must never be forgotten in the discussion of the rate of return. Investors weigh the relative attractiveness of investment in the utility with the gains anticipated from all other investment opportunities. The utility must offer inducements, in security and earnings, equivalent to those elsewhere available.

DIFFICULTIES CONCERNING THE RATE OF RETURN. *Judicial and regulatory aims.* Important as is the rate of return in utility regulation, there are many unresolved difficulties associated with its definition and determination. As with other phases of rate regulation, confusion exists as to the appropriate functions of the review authorities and the commissions; indeed, nowhere has this confusion been more destructive of clarity in the description and solution of regulatory problems. Except when the question is raised as to whether the commission has acted within its statutory powers, the courts are theoretically concerned with the determination of whether prescribed rates are confiscatory; yet their pronouncements are generally more pertinent to the reasonable, than to the confiscatory, rate of return. And conversely, the commissions often seem to seek a nonconfiscatory rate of return, one that will escape the condemnation of the courts, rather than the establishment of that reasonable rate of return which is their proper concern.

The economic or the legal rate of return. A second serious source of confusion concerns the objective of the rate of return. Is it the purpose of regulation to prescribe that economic rate of return which the utility requires to meet its obligations to existing security holders and to attract additional capital? Or is the goal to prescribe the legal rate of return which the utility deserves, that is, the rate which accords with its rights? The historical development of regulation has given emphasis to the second point of view. Regulation began with a determination to be objective in dealing with the revenue requirements of the

⁴ The significance of "competence and efficiency in management" and the measurement of managerial efficiency are discussed in subsequent sections of this chapter. A suggestion for stimulating and encouraging managerial efficiency is set forth in Chapter XVII.

utility, uninfluenced by the excesses of utility finance, with a determination to let the corporation go through failure and reorganization if it were unable to survive with the return which would be adequate for a competently and honestly managed utility. The development of the valuation technique for the determination of the rate base is part of this policy.

Yet the fact is that the determination of the rate of return cannot ignore the needs of the utility. If it does not directly recognize the utility's needs as measured in terms of its capital structure and the financial requirements thereon, the regulatory body must do so indirectly in considering the ease or difficulty with which new capital funds can be drawn into the enterprise. To ignore the capitalization of the corporation and establish a rate of return upon the "fair value of the property" may permit earnings that are excessive in relation to the interest and dividends which need to be paid, or it may deprive the corporation of the means of meeting its interest charges. To prescribe a single rate of return without regard to the composition of the capital structure may permit a return of 8 per cent on the capital stock of one corporation that has only common stock outstanding, and a return of 15 per cent on the common stock of another corporation that has been financed partly with bonds and preferred stocks. The establishment of the rate of return cannot and should not ignore the relation of the rate base to the capitalization of the corporation, nor the composition of that capitalization.

In reaching the conclusion that the objective of regulation should be to provide that rate of return which is adjusted to the needs of the utility rather than to some concept of its deserts, it is not to be thought that the utility's financial requirements, as defined by the outstanding securities, should always be accepted. Regulation may not subordinate the interests of consumers to the interests of investors, any more than it may ignore the legitimate interests of investors in the zeal for protecting consumers. The capital costs of the utility are as appropriate an object for the critical scrutiny of the regulatory commission as any other expenditures which the utility management may claim as a part of its cost of service. But if the utility's needs for revenue, as measured by the payments on its outstanding securities, cannot be accepted as the standard for the establishment of the fair rate of return, it should be frankly recognized that this policy may mean receivership and reorganization.

An acceptance of the needs of the utility as the standard for the prescription of the rate of return, may be expected to encourage the adoption of that long-term policy which will tend to the reduction of costs of capital to the lowest level consistent with satisfactory service. The commission may be expected to ask why the utility's "needs" are precisely what they are and whether it would not be possible to reduce those "needs" by changes in financial policies—for example, the accumulation of more adequate depreciation reserves, the establishment of an earnings-equalization reserve, or through a reconstruction of its capitalization.

Other difficulties. Other difficulties are associated with the procedure followed by the regulatory authorities and with certain complexities inherent in the organization of the utility industry. First, the procedure for dealing with the rate of return has not been standardized with reference to the facts which

the commission should consider. Secondly, the determination of the rate of return follows largely subjective methods, with no assembling of objective factual data as a basis for an "informed judgment." And finally, the service subject to regulation is often only a part of the corporation's operations: the regulation may be concerned with only one type of service, such as the supply of electric energy to residences, or it may be concerned with only one of many geographical areas in which the company operates.

2. CONCEPTS OF THE RATE OF RETURN

JUDICIAL AND REGULATORY CONCEPTS. Confusion marks many of the statements of courts and commissions with respect to the nature and determinants of the rate of return. The function of the commission is to establish a reasonable rate of return, and it is ordinarily thought that the reasonable rate of return is one which suffices to attract additional capital as needed. Judicial review of commission determinations may be requested on two grounds, either that the commission has acted contrary to its delegated authority, or that the rates prescribed are confiscatory and unconstitutional. Thus, a court might determine whether the commission has established reasonable rates. But the majority of court reviews concern confiscatory rates.

Despite the fact that the courts have repeatedly been called upon to judge whether prescribed rates are confiscatory, no definition of a confiscatory rate has been formulated except in terms of a rate which fails to be reasonable. The leading pronouncements of the Supreme Court in the *Bluefield* and *United Railway* cases⁵ are more appropriate to describe the reasonable rate of return than to identify the confiscatory rate. The consequence of the Court's lack of clarity has been that the commissions, instead of erecting independent standards and procedures for the finding of the reasonable rate of return, have directed their attention to finding the rate that would not be so low as to be confiscatory.⁶ A prerequisite to a sounder approach to the problems of the rate of return must be a clarification of the significance of "confiscatory" and "reasonable" as designations of the rate of return.

THE "REASONABLE" RATE OF RETURN. The reasonable rate of return is almost universally recognized as that rate which suffices to attract additional capital to the enterprise on favorable terms. This concept was accepted doctrine before the turn of the century,⁷ and is still the standard to which commissions and courts most frequently refer. Although the Supreme Court's formulation of the concept in the *Bluefield* case is perhaps more frequently quoted than even the "rule of *Smyth v. Ames*," the priority of this concept of reasonable rate of return does not rest merely on authority. It is at once the most logical and the

⁵ *Bluefield W. W. & Imp. Co. v. W.Va.*, 262 U.S. 679, 692 (1923); *United Ry. & E. Co. v. West*, 280 U.S. 234, 249-252 (1930). The pertinent section of the *Bluefield* case is quoted below.

⁶ In the *Southwestern Bell Telephone Company* case, Mr. Justice Brandeis comments on this tendency and attributes it to the uncertainties caused by the rule of *Smyth v. Ames*, but it seems quite as much the product of confusion as to the nature of the rate of return. (262 U.S. 276, 296 [1923].)

⁷ *Reagan v. Farmers' Loan & Trust Co.*, 154 U.S. 362, 412 (1894).

most pertinent concept of the rate of return. It is the most logical concept of the reasonable rate of return, since it cannot be contended that the earnings of a company are inadequate or unsatisfactory if investors are currently willing to embark more of their funds in the enterprise. Furthermore, this rate of return does not rest on the judgment of a single individual or a commission; it is witnessed by the consensus of the securities market, where many individuals independently and freely appraise the attractiveness of investment in the utility in competition with all other available investment opportunities. And when the investment market is willing to direct funds into the enterprise, it may not logically be said that its present and prospective rate of earnings is not "reasonable." This concept of the "reasonable" rate is also most pertinent; a fundamental purpose of regulation is to assure the continuity of the service at the lowest possible cost, a purpose whose fulfillment requires that capital be obtainable on favorable terms. To define the reasonable rate of return in terms of the attraction of capital serves to safeguard the long-run interest of consumers in adequate service.

THE "CONFISCATORY" RATE OF RETURN. In general, the courts have thought of the confiscatory rate of return as one which fails to attract additional capital, but this concept lacks the precision and the significance that is requisite to a clear distinction between the proper spheres of actions of the judiciary and the commissions. This concept leaves the determination of the rate of return to the "exercise of enlightened judgment" in a vacuum devoid of all the objective facts that any nonsubjective judgment would require.

The confiscatory return may be defined as that return which leads to the withdrawal of capital. How may capital withdrawals be identified? It may be said that the individual investor withdraws his capital when he sells his securities in the enterprise, and that confiscation results from the decline in the price which he can realize for his stocks and bonds. The difficulty with associating capital withdrawal with an individual's selling is that individuals sell securities for many reasons other than dissatisfaction with the earnings on the security (the discovery of a "better" investment opportunity, or the need for cash, or even the expectation that general market conditions will carry the security to lower prices in the future when an advantageous repurchase will be possible); that when one individual sells there is always another who buys and thereby indicates an absence of "confiscation"; and that market operations may be undertaken with the deliberate purpose of creating the appearance of "confiscation." The "withdrawal of capital" is not to be identified with any and every sale of securities by individuals.

However, the evidence of a confiscatory rate of return is probably to be sought in the record of security prices. It may be said that each share of utility stock has a legitimate book value. This legitimate book value will be differently measured according to the concept of the rate base which prevails. If the investment base is accepted, the legitimate book value of the stock is the actual, reasonable investment per share of stock; if the fair-value base is used, the legitimate book value of the stock is that proportionate part of the fair value properly attributable to a share. If the withdrawal of investors from their

commitments in the utility leads to a decline in the market value of the stock below the legitimate book value of that stock, there is *prima facie* evidence that investors consider the earnings unsatisfactory and confiscatory.

Evidence of extreme confiscation might be said to be a withdrawal of capital by the corporation itself. This might happen through a refusal to replace capital equipment as it is retired.

The concept of confiscation as the withdrawal of capital investment is not without its difficulties in practical application, and certain qualifications and warnings are necessary. First, it should be noted that the standard of the market price falling below the legitimate book value of the security is not applicable if the right to income is contractually limited. The decline in the price of preferred stocks or bonds simply reflects the fact that investors could secure more favorable terms if they were not already committed to securities whose interest or dividend payments are less than the going rate. Secondly, it must be emphasized that it is the persistence of the market price below the legitimate book value, not the temporary fluctuations of security prices, which is the evidence of withdrawal of capital from the enterprise whose earnings are at a confiscatory level. Thirdly—and this is most important—the persistence of a low price for the security must be accompanied by an abnormally high yield in comparison with the yields on other similar securities; otherwise the low market price may be symptomatic of general market conditions rather than of the inadequacy of the utility's earnings. Fourthly, the capital structure of the utility must be sound, for even extravagantly large earnings may not suffice to maintain a reasonable market price for the securities of an overcapitalized or mismanaged corporation. And finally, the market must be "normal" in that there are no artificial manipulations of the price of the security.

THE NONREASONABLE AND NONCONFISCATORY RATE OF RETURN. If the reasonable rate of return is that rate which attracts additional capital on favorable terms, and if the confiscatory rate of return is that which leads to the withdrawal of capital, does it follow that a rate of return which is not reasonable is thereby confiscatory? Such seems to be the implication of the Supreme Court's *Bluefield* decision. Yet to identify all rates of return which are not reasonable as being *per se* confiscatory leads the courts into inquiries that are appropriate to the functioning of regulatory commissions, leads commissions to fix rates with the objective of escaping condemnation by the courts, and encourages the companies to be premature in their appeals to the courts.

There is clearly a zone between the lowest rate of return which is reasonable and the highest rate of return which will be condemned as confiscatory, in the sense of leading to the withdrawal of capital. There are, in effect, three rates of return: the reasonable rate, the confiscatory rate, and the nonreasonable and nonconfiscatory rate. The third, the nonreasonable and nonconfiscatory rate of return, may be defined as that zone within which the rate of return will not attract the investment of new capital on favorable terms and yet will not result in the withdrawal of capital already invested in the enterprise.

Is it possible to translate these concepts into objective indicia which will make their application in the regulatory process practicable? While the objective criteria will be subsequently considered at some length, the reasonable

rate of return may be judged in terms of the market price of the utility's security. The company that is well established, with a management of good repute, should be able to raise new capital through common-stock issues sold at par if its outstanding stock is selling some 10 points above par. For such a company, it may be said that any rate of return which permits the earnings requisite to keep the market price of the stock some 10 points above par (or above the legitimate book value) should certainly be accepted as a "reasonable" rate of return.

On the other hand, if the earnings of the company are so limited that the market price of the stock stands persistently more than 5 to 10 points below par, and if the yield is markedly higher than that characteristic of other similar securities, there is *prima facie* evidence that the rate of earnings is so low as to lead investors to seek a withdrawal of their capital; that is, the rate of return is "confiscatory."

Finally, if the market price of the security should continue close to par, or to the legitimate book value of the stock, it would probably be difficult for the utility to market any considerable volume of new securities without accepting an appreciable discount in price. From the regulatory point of view, the rate of earnings would be less than reasonable, for new capital would not be forthcoming on favorable terms. On the other hand, it could not be said that the rate of return was confiscatory. The rate of return is nonreasonable (will not elicit additional investments on favorable terms), and yet nonconfiscatory (as evidenced by the willingness of investors to leave their funds with the utility).

3. THE PRINCIPLES GOVERNING THE RATE OF RETURN

JUDICIAL AND REGULATORY OBJECTIVES. The objectives of the judiciary and the commissions differ: the former are concerned with the limited question of confiscation; while the latter are attentive to the broader problem of the reasonable rate of return. The courts direct their inquiry toward the *rights* of the utility and discuss the rate of return to which the company is "entitled."⁸ Hence, the courts are able to pass over many matters which must be of acute interest to the commission. The commission seeks the "reasonable" rate of return, a concept which centers in the attraction of new capital. It may not disregard what the company is "entitled" to demand as its "constitutional right," since that course would lead to an appeal to the judiciary. But the commission has not discharged its obligations to consumers or investors if its inquiry is confined merely to the company's "rights"; it must center its attention on what the company *needs*. Furthermore, the company's "needs" may not be estimated simply in terms of the current moment, but must comprehend the maintenance of the utility's financial health into the predictable future.

THE GENERAL RULE. The Supreme Court had concerned itself with the basic right of the utility to earn a return prior to its decision in *Smyth v. Ames*.⁹ The general principle of dealing individually with the rate of return

⁸ *Bluefield W. W. & Imp. Co. v. W. Va.*, 262 U.S. 679, 692 (1923).

⁹ *Stone v. Farmers' Loan & Trust Co.*, 116 U.S. 307 (1886); *Chicago, M. & St. P. Ry. v. Minn.*, 134 U.S. 418 (1890); *Reagan v. Farmers' Loan & Trust Co.*, 154 U.S. 362 (1894); *Covington & L. T. Rd. v. Sandford*, 164 U.S. 578 [1896].

as peculiar to the particular utility was established in 1909.¹⁰ The favorite modern formulation of the general rule is to be found in the *Bluefield* case:

"... What annual rate will constitute just compensation depends upon many circumstances and must be determined by the exercise of a fair and enlightened judgment, having regard to all relevant facts. A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. A rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally."¹¹

This "rule" merits careful analysis. The first sentence, calling for a consideration of "all relevant facts" and the exercise of "enlightened judgment," may be said to describe the general procedure (or frame of mind) in which the courts are told to approach all matters pertaining to the review of rates established by legislative authority.

The second sentence describes the standard for judging whether rates are confiscatory: "the utility is entitled to such rates as will permit it to earn a return on the value of the property . . . equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties." The standard itself is patently vague and subject to uncertainty. It is clear that the Court is speaking only of what the utility is entitled to demand. That which may be demanded as a right is a return equal to that generally being made on like investments. The difficulties of identifying like investments and of reconciling the inevitable differences in the return being earned by "like investments" are not explored. Nor does the Court state explicitly whether "other business undertakings" refers to other utilities, whose earnings may approach the monopoly level if they are not subject to effective regulation, or to the earnings of competitive business enterprises. Logically the second standard is the sounder, although the practical difficulty of identifying the "corresponding risks and uncertainties," and interpolating the results where the risks and uncertainties are not exactly "corresponding" calls for a difficult judgment. In principle, however, the reference of the "right to a return" to the competitive standard has much to be said for it; it recognizes that the investors in the utility are not entitled, even indirectly, to profit from any monopoly advantages which the company may enjoy.

The third sentence in the rule, to the effect that the "return should be suf-

¹⁰ *Willcox v. Consolidated Gas Co.*, 212 U.S. 19, 48-49 (1909).

¹¹ 262 U.S. 679, 692-693 (1923).

ficient . . . to maintain . . . its credit and enable it to raise" the capital necessary for the discharge of its public responsibilities is open to two quite different interpretations. It has generally been interpreted as meaning that the utility has a *right* to a return not only equal to that generally available in other similar business undertakings, but also sufficient to attract additional capital. But this interpretation results in a direct judicial invasion of the field of the reasonable rate of return, which is the proper concern of the legislature or the commission but not of the judiciary. It also leads to confusion as to the proper limits of reasonableness and confiscation, defining any rate which is not reasonable as *per se* confiscatory—a conclusion that is not only inimical to sound regulatory practice but contrary to common sense. A more persuasive and intelligent interpretation would regard the second sentence as a specification of what the utility is entitled to demand from the courts, and the third sentence as dictum, a description of what the regulatory agency should ordinarily accord to the utility; that is, the second sentence is the standard for testing whether the rate of return is confiscatory and the third sentence is a description of the reasonable rate of return which it is the proper function of the commission to afford.

The fourth and last sentence in the statement emphasizes the necessity of considering contemporary conditions, presumably both with respect to the regulated enterprise and with respect to business conditions generally.

The statement in the *Bluefield* case has been generally accepted by both lower courts and commissions as affording the starting point for the consideration of both confiscatory and reasonable rates of return, an acceptance that can be reconciled with established jurisdictional principles of utility regulation only on the basis of the interpretation of the rule set forth above. In fact, most regulatory authorities have been so charmed with the magic of the statement that they have been content to recite the formula without undertaking the painstaking research that would be necessary to develop the objective facts upon which the "enlightened judgment" should rest.

The implementing of the general rule of the *Bluefield* case requires an examination of the factors and circumstances which the commissions and courts have considered to be determinants of the appropriate rate of return. For purposes of exposition these determinants may be grouped around eight items: the attraction of capital, comparisons with other similar undertakings, current financial and economic conditions, the cost of money, the risks of the enterprise, the financial policy and capital structure of the utility, the competence of management, and its financial history. There are other factors which are occasionally discussed although they are not regularly regarded as determinants of the rate of return.

THE ATTRACTION OF CAPITAL. The interests of consumers, investors, and management all focus in the ability of the utility to secure additional capital on advantageous terms. The importance of the attraction of capital to regulated enterprises has been uniformly recognized by courts and commissions.¹²

¹² *Reagan v. Farmers' Loan & Trust Co.*, 154 U.S. 362, 412 (1894); *Southwestern Bell Tel. Co. v. Comm.*, 262 U.S. 276, 291, 306 (1923); *Bluefield W. W. & Imp. Co. v. W.Va.*, 262 U.S. 679, 693 (1923); *United Ry. & E. Co. v. West*, 280 U.S. 234, 251 (1930); *Smith v. Illinois Bell*

Indeed, it might be said that this determinant embraces all the others, or that all of the other determinants of the return act through their influence on the ability of the utility to attract capital. Certainly it is clear that under normal conditions the inability of a utility to secure additional capital must be recognized as indicative of a less than reasonable return, and the ability of a company to command new capital on favorable terms must be accepted as conclusive evidence that the earnings are reasonable. While sound regulatory policy requires that utilities generally be permitted earnings that will attract such capital as the industries require, it should not be held that a utility has a constitutional *right* to demand earnings adequate to attract new capital.

The utility's expectation that the commission will permit it to earn a return sufficient to attract additional capital is not unqualified. It can expect only the *opportunity* to earn such a return under competent and efficient management. The utility can expect such a reasonable return only under "normal conditions." And, of course, even the normal expectation of a return that will suffice to attract capital is dependent upon the rates and charges not being unjust or unreasonable for consumers.¹³

COMPARISONS WITH OTHER SIMILAR UNDERTAKINGS. The statement in the *Bluefield* opinion that the utility is entitled to earn a return equal to that generally being made on investments in other business undertakings attended by corresponding risks and uncertainties was coupled with the qualification that a regulated business had no right to such profits as are "realized or anticipated in highly profitable enterprises or speculative ventures." In the interpretation of the rule herein advanced, it was stated that if the utility received a return comparable to that derived from other similar investments it could not complain of confiscation. Despite the fact that it is fundamentally a test of confiscatory rates, this standard has also been "considered" by commissions in establishing the *reasonable* rate of return.¹⁴

Different interpretations of the "comparison" standard add to the confusion that besets its use. The Court has not explicitly stated whether the comparison is (1) of *earnings realized on the properties* (and if so, whether the comparison contemplates the use of present fair value for the utility property and investment, or cost, or some other base for the property of the comparable undertaking), (2) of *earnings realized on the stockholders' investments* in the two properties, or (3) of the *current yields* which are available on the securities of the two enterprises. (1) Though the *Bluefield* statement runs in terms of the return or earnings, there is good reason for rejecting the first interpretation. The earnings in relation to the properties would be significant only if the properties were valued on a common basis; the Court would presumably use

Tel. Co., 282 U.S. 133, 161 (1930); *Wabash Valley Elec. Co. v. Young*, 287 U.S. 488, 501 (1933); *Los Angeles G. & E. Co. v. Comm.*, 289 U.S. 287, 319 (1933).

¹³ *Covington & L. T. Rd. Co. v. Sandford*, 164 U.S. 578 (1896); *Smyth v. Ames*, 169 U.S. 466 (1898); *San Diego Land & Town Co. v. National City*, 174 U.S. 739 (1899); *Minnesota Rate Cases*, 230 U.S. 352 (1913).

¹⁴ Since commissions commonly report difficulty in discovering valid comparisons, it may be suspected that their resort to this index of the rate of return results from a mistaken belief that in the fixing of reasonable rates they are required to consider the identical data which the courts have approved for testing confiscation.

the fair value as the standard for the utility; but no comparable monetary estimate of the property of comparable enterprises would be available. (2) The earnings realized on the stockholders' investments in the two enterprises would probably encounter a similar objection in that no reliable measure of such investment would normally be available. Certainly the experience of regulatory authorities with the accounting practices of utilities affords little basis for confidence in the unpoliced accounts of unregulated enterprises. (3) The third interpretation, involving a comparison of the yields currently available on investments in the utility and in comparable corporations, supplies a more workable standard. Here it is possible to secure objective data. The leveling effect of the securities markets may be expected to bring yields to the same relative level, with due regard for differences in risk, and consequently, the chance selection of certain enterprises for the comparison would be less likely to affect the conclusions to be drawn from the data.¹⁵

The propriety of the comparison standard for testing the confiscatory character of the utility's return may be readily supported. Obviously, if investors are not in a position to improve their position by placing their funds in other investments there can be no *confiscation* of their property. Only where there is an element of coercion, a restraint upon the free choice of the investor, such as depriving him of the earnings that would be readily available elsewhere, is there ground for the claim of confiscation.

Acceptable as the comparison standard may be theoretically, there are serious practical difficulties in its application. First, it is difficult to identify other business undertakings that are truly comparable, and subject to corresponding risks and uncertainties. Secondly, the comparison commonly results in little more than a consideration of the effects of current financial and economic conditions on investors' attitudes toward utilities and other industries. Thirdly, neither the courts nor the commissions have given sufficient attention to the development of objective data that would make the comparisons reliable and trustworthy. Some commissions have confessed themselves unable to establish valid comparisons. Those commissions which have resorted to the standard have not set forth the basic facts that would establish either the validity of the comparison or the facts on which their conclusions are based.¹⁶

CURRENT FINANCIAL AND ECONOMIC CONDITIONS. In all investigations into the determinants of the rate of return, the financial and general economic conditions of the present and the predictable future are emphasized. The warning of Mr. Justice McReynolds in the *Southwestern Bell Telephone* case as to

¹⁵ Such seems to be the understanding of Mr. Justice Stone, as expressed in one of his dissents: "... The company supported its claim of confiscation by no evidence of the current yields of comparable investments and by no evidence of the rate of return generally obtaining in the money market. The general conditions of the money market and the rate of return on invested capital may have a controlling influence in determining the issue of confiscation. ... There is at least grave doubt whether a return of 4½ per cent is so out of line with the current yield on invested capital as to be deemed confiscatory. This doubt, if accepted principles be applied, must be resolved against the company, which has offered no evidence by which the doubt could be removed." (*West v. Chesapeake & Potomac Tel. Co.*, 295 U.S. 662, 682-683 [1935].)

As is apparent from Mr. Justice Stone's remarks, this interpretation of the standard relates it closely to another determinant, current financial and economic conditions.

¹⁶ See *Michigan Bell Tel. Co.*, 10 P.U.R. (N.S.) 149, 204-205 (Mich., 1935); *The Peoples Gas Light & Coke Co.*, 19 P.U.R. (N.S.) 177, 286 (Ill., 1937).

the necessity of making "an honest and intelligent forecast of probable future values" is as applicable to the determination of the rate of return as to the finding of the rate base.¹⁷ The Court has repeatedly warned that the appropriate rate of return is not to be found in the citation of decisions relating to past conditions or different circumstances.¹⁸

The prominence accorded to present conditions in the selection of a rate of return is inevitable. The significance of the other determinants—the attraction of capital, the comparisons with other enterprises, the cost of money, et cetera—are all dependent upon the accuracy with which they relate to the conditions that prevail during the period for which the prescribed rates are in effect. Yet current financial and economic conditions are not separate determinants of either the confiscatory, or the reasonable, rate of return. Their significance derives from the fact that current conditions affect the magnitudes of all the objective data with respect to the attraction of new capital, its cost, and alternative investment opportunities.

The discussions of current financial and economic conditions by courts and commissions sometimes carry the implication that the change in conditions should be reflected in both the rate base and the rate of return. The results of according this double recognition to changed conditions should be understood. If a utility may be assumed to have an investment of \$100 on which a 6 per cent rate of return is permitted, its total return is \$6; if through changed conditions the general level of costs has increased 50 per cent, the utility might claim a rate base of \$150, on which a return of 6 per cent would be \$9; or the same return of \$9 would result from the use of a 9 per cent return on the original investment of \$100; but if the rate base is increased to \$150 and the rate of return is increased proportionately to 9 per cent, the return becomes \$13.50.¹⁹ Equally startling results, which might well be disastrous for the solvency of the utility, would follow a similar downward adjustment of both rate base and rate of return. Of course, what the objective data reveal as to the rate of return depends on whether attention is focused on the rate of *earnings* to the utility corporation or on the cost of capital as measured by stock-market *yields*. Periods of high prices are usually accompanied by large pecuniary earnings, but by relatively low yields on securities, and opposite conditions are to be expected in periods of a low or falling price level. The *earnings* standard might lead to the dubious double adjustment of both rate base and rate of return; while the *cost* or *yield* standard would result more reasonably in offsetting adjustments of the rate base and the rate of return. This relation be-

¹⁷ 262 U.S. 276, 287, 288 (1923).

¹⁸ The dramatic change in financial and general economic conditions accompanying the depression of the 1930's occasioned several statements to this effect by the Court: *United Ry. & E. Co. v. West*, 280 U.S. 234, 249 (1930). See also *Central Kentucky Nat. Gas Co. v. Railroad Comm.*, 290 U.S. 264 (1933). And similar expressions abound in the commission decisions. See *Los Angeles v. So. Cal. Tel. Co.*, 14 P.U.R. (N.S.) 252, 278-279 (Cal., 1936).

¹⁹ The results become even more startling if the distribution of the return among the different classes of security holders is considered. If the capital structure be assumed to be \$50 in 5 per cent bonds, \$25 in 6 per cent preferred stock and \$25 common stock, the bond interest would absorb \$2.50, and the preferred stock dividends \$1.50. With a return of \$6, the earnings of the common stock would be \$2 or 8 per cent; with a return of \$9, the common stock would earn \$5 or 20 per cent; and with a return of \$13.50, the common stock would earn \$9.50 or 38 per cent.

tween the rate base and the rate of return has been sometimes recognized in high places, but it has not received the emphasis which its importance justifies.²⁰

While many commissions and courts have provided for a change in the rate of return with changing economic conditions, there has always been a considerable minority opinion, which has argued that since they are not permitted to earn high profits, such as fall to unregulated enterprises during periods of prosperity, the utilities should not be required to accept a reduced return during periods of economic depression, or at least their return should not be reduced in proportion to the decline in earnings of unregulated enterprises. There is much justice in this position, but it is not wholly practical during periods of deep depression. Rigidly applied, the doctrine of a stable return during periods of both prosperity and depression would require the commission to prescribe rate increases during depression years to offset the decline in earnings resulting from the shrinkage in the volume of business. The general economic welfare, as well as the maintenance of a satisfactory volume of business, requires that utility charges be more, rather than less, responsive to changing economic conditions (perhaps to an even greater extent than would be possible through changes in the rate of return), and it should be one of the responsibilities of regulatory authorities to accomplish this objective without imposing any unfair burdens upon the utility companies and their investors.²¹

THE COST OF MONEY. The cost of money to the utility may be of controlling influence in the determination of the rate of return. Two concepts of the cost of money have been recognized: the historical cost and the current cost.

The historical cost of money for the particular utility is perhaps the best index of the *needs* of the utility. So long as the solvency of the company is considered important, the actual cost of capital cannot be ignored by the commission. But the historical cost of money has a broader significance, especially when consideration is given to the past cost of money for the particular utility in comparison with the past cost of money to business generally. Such a comparison throws light on the reasonableness of the utility's present income requirements and on the wisdom of its past policies.

The historical cost of money has been considered frequently by commissions and courts.²² It has naturally received most attention from those who support the cost principle as controlling both in the determination of the rate base and the rate of return.²³ Where the issue has been raised in the Supreme

²⁰ Mr. Justice Brandeis discussed the problem in his separate opinion in the *Southwestern Bell Telephone Company* case, 262 U.S. 276, 304-305 (1923), and Mr. Justice Stone's concurring opinion in *West Ohio Gas Co. v. Comm.* (No. 1), 294 U.S. 63, 78 (1935), carried a similar warning.

²¹ The obvious device is the adoption of an earnings-equalization reserve that would permit the utility to accumulate surplus earnings during periods of prosperity.

²² *United Ry. & E. Co. v. West*, 280 U.S. 234, 251 (1930).

²³ The argument for the historical-cost standard has been cogently summarized by Mr. Justice Brandeis:

"In essence, there is no difference between the capital charge and operating expenses, depreciation, and taxes. Each is a part of the current cost of supplying the service; and each should be met from current income. When the capital charges are for interest on the floating debt paid at the current rate, this is readily seen. But it is no less true of a legal obligation to pay interest on

Court the historical-cost standard has not been condemned.²⁴ Clearly, historical cost is pertinent evidence of the appropriate rate of return.

The current cost of money has received even more attention than the historical cost by most regulatory bodies.²⁵ The current cost is perhaps the best index of what the company must earn if it is to attract capital on satisfactory terms. The evidence as to the current cost of money requires an analysis of the conditions of the money market, the yield on the securities of the utility and on other similar investments, the prevailing rates of interest, and the experience of corporations with new issues of securities.

Risk. Either the confiscatory or the reasonable rate of return should be determined with reference to the particular circumstances of the individual utility, for an ever-varying complex of risks besets different enterprises, making uniform treatment impossible.²⁶ Of all the elements that demand attention in the determination of the proper rate of return, the factor of risk is most open to error and abuse. In the name of risks that are no longer important, the rate of return has been established at levels which bear no relation to the real costs of money or to the actual ability of the utility to attract additional capital. The first requirement in considering the influence of risk is an analysis of the *particular* risks that beset the enterprise. And the second is to determine what risks can better be cared for otherwise than through the rate of return.

It may be admitted that all risks impose costs upon the utility, and if these costs are not otherwise compensated they will appear in the rate of return through their influence on the cost of money and the ability of the utility to attract new capital. Fortunately, it is both possible and desirable to remove, or to provide for, many of the risks through arrangements which do not increase the rate of return. One of the most persistent risks of unregulated enterprises is competition; the modern utility is generally protected from the competition of a like service. The risks of obsolescence and inadequacy of capital equipment are, or should be, met through the depreciation reserve. The danger of nonpayment of interest on borrowed funds increases the cost of loan funds, but the regulation of the security issues of utilities so as to preserve a balanced capital structure eliminates much of this risk and reduces the cost of bond money. The cost of common-stock money reflects the possibility that dividends may not be regularly paid, but the provision of an earnings-equalization reserve would reduce this risk and make common-stock capital more readily available to the corporation. It is the joint responsibility of management and

long-term bonds, entered into years before the rate hearing and to continue for years thereafter; and it is true also of the economic obligation to pay dividends on stock, preferred or common. . . . To fix the return by the rate which happens to prevail at such future day, opens the door to great hardships. Where the financing has been proper, the cost to the utility of the capital, required to construct, equip and operate its plant, should measure the rate of return which the Constitution guarantees opportunity to earn." (*Southwestern Bell Tel. Co. v. Comm.*, 262 U.S. 276, 306 [1923].)

²⁴ *Los Angeles G. & E. Corp. v. Comm.*, 289 U.S. 287 (1933); *Railroad Comm. v. Pacific Gas & Electric Co.*, 302 U.S. 388 (1938).

²⁵ *Bluefield W. W. & Imp. Co. v. W.Va.*, 262 U.S. 679, 692 (1923); *United Ry. & E. Co. v. West*, 280 U.S. 234, 251 (1930); *Smith v. Illinois Bell Tel. Co.*, 282 U.S. 133, 161 (1930); *Los Angeles G. & E. Corp. v. Comm.*, 289 U.S. 287, 319 (1933).

²⁶ The pertinence of the risk element was stressed in one of the Supreme Court's early discussions. See *Willcox v. Consolidated Gas Co.*, 212 U.S. 19, 48 (1909). Quoted, *Supra*, p. 380.

the regulatory authorities to canvass the risk elements inherent in the utility enterprise, to eliminate those that can be avoided, and to select the most economical means of meeting the costs entailed by those remaining. Those risks which cannot be met otherwise, may appropriately be considered as one of the determinants of the rate of return.

What are some of the risks that are normally compensated for in the rate of return? They arise out of the nature of the territory in which the utility operates, the stability or instability of the market for its product or service, the future prospects of growth, the possibility of incompetence or dishonesty in management, and the character of regulation. In a few instances, risks are associated with production of the service; for example, the hydroelectric utility is dependent upon rainfall and a sufficient flow of water, and natural-gas utilities are dependent upon obtaining an adequate supply of their product.

Utility corporations generally are relatively less exposed to risks than other business undertakings. This protection from the normal risks of business should be evidenced in the ability to attract capital more cheaply than unregulated enterprises. It is commonplace that utilities are significantly protected from competition,²⁷ but it is worth while to note precisely what this means. It permits the management to adapt plant investment to the requirements of the market; it permits the more accurate forecast of market growth; and it affords some assurance that the investment can be recovered even though technical changes introduce new and more efficient productive equipment. A large part of the market for utility services is relatively stable, even in the face of prolonged depression. The stability of demand for utility services is partly the result of the success of the industry in progressively reducing the cost of the service so that it now absorbs but a small part of the consumer's budget, and it is partly because utility services are prime necessities for modern urban living. Furthermore, it may be noted that regulation may even afford some protection against managerial incompetence and dishonesty: the necessity for submitting plans for expansion to the commission causes management to be more self-critical; the prescription of uniform systems of accounts and the requirement of reports not only give assurance that business records will be better kept, but they hold out the possibility of discovering any irregularities in financial management; and the regulation of rates brings the critical judgment of the commission to a focus on the efficiency of operations and the necessity for the expenditures which the company incurs.

FINANCIAL POLICY AND STRUCTURE. The financial policy of the corporation and its capital structure are always highly significant in the investors' appraisals of the desirability of committing their funds to an enterprise. A sound financial policy requires accurate accounting for all business expenses, including adequate provision for depreciation, and the proper administration of all

²⁷ The competition to which utility managements usually refer when they insist that their business is competitive is of two kinds: (1) the competition of a substitute service, such as the use of kerosene lamps instead of electricity or the industrial plant's generation of its own steam power instead of purchasing electrical energy; and (2) the competition of the consumers' preference for a new car rather than the purchase of an electric stove, or more frequent attendance at movies rather than the purchase of telephone service. This is competition which limits the freedom of utility to raise its price, but it is not the kind of competition which drives prices down to cutthroat levels.

reserves. It is essential that full and accurate reports of the financial affairs of the business be promptly available to the security holders. The relations of the directors and officers to the corporation must remain on a fiduciary basis, with no suspicion that official connections are used to advance the interests of the individual at the expense of the business.

The importance of a balanced capital structure has been uniformly stressed, for it not only enables the corporation to obtain capital economically, but permits the choice of that mode of financing which is most favorable under current conditions of the investment market. The utility is under an obligation to adopt the most economical methods of financing consonant with maintaining that degree of flexibility in capital structure necessary to assure its future ability to sell any securities that may be desirable.

THE COMPETENCE OF MANAGEMENT. Closely associated with the financial policy of the corporation is the competence of the management; indeed, it might be said that the administration of the corporation's income constitutes the acid test of managerial competence. The Supreme Court in its *Bluefield* "rule" made "efficient and economical management" a prerequisite to the utility's claim to either a nonconfiscatory or a reasonable rate of return.²⁸

The discussion of the competence of management reveals another instance where regulation has failed to develop objective criteria. Discussions of operating expenses, the quality of the service, and similar matters indicate an interest in the question of managerial efficiency, but the decisions are devoid of any indication of what specific effect these considerations have on the rate of return.

It may be questioned whether the regulatory authorities should do more than they have done to "recognize" efficiency of management. This is not to say that commissions should not seek to develop objective standards for measuring efficiency and economy, or that utilities should not be penalized through a reduced rate of return where objective data indicate a managerial failure. But to go beyond this and attempt to encourage or reward efficiency in management through the rate of return does not seem to be a practical policy. The increase in the rate of return does not accrue to the benefit of management except where the management of the corporation is the principal stockholder, a situation which prevails only where the operating utility is controlled by a holding company. Furthermore, the additional allowance loses its stimulus to efficiency if its continuance is not contingent on the attainment of definite standards, and the withdrawal of the "reward" would always appear to be somewhat unfair to those investors who had purchased securities on the expectation that the established return would be continued.

FINANCIAL HISTORY. The financial history of the utility bulks large in the investor's appraisal of its securities. And since investors are sensitive thereto, the financial history of the utility requires the attention of the court or commission. Indeed, theories about the effect on investors of a contemplated rate of earnings may be brushed aside before the evidence of the past record of the company.²⁹

²⁸ *Bluefield W. W. & Imp. Co. v. W. Va.*, 262 U.S. 679, 693 (1923).

²⁹ Such was the Supreme Court's reaction to the claims of the Illinois Bell Telephone Company in the *Lindheimer* case, 292 U.S. 151, 162-164 (1934).

The dividend record of the company is probably the most frequently considered aspect of its financial history. The "economic obligation to pay dividends" has been recognized by the Supreme Court, although the priority of the consumer's rights to be charged only reasonable rates has also been asserted.³⁰ Indeed, in one instance it was the opinion of Mr. Justice Sutherland that the rate of return, presumably the *reasonable* rate of return, should be sufficient so that "after paying all expenses of operation, setting aside the necessary sums for depreciation, payment of interest and reasonable dividends, there should still remain something to be passed to the surplus account."³¹ No one would question that "sound business management" would seek to accumulate a surplus so that regularity of dividend payments might be maintained, but it is a most dubious doctrine that consumers should be charged rates sufficient to build up such a surplus, particularly in view of the doctrine in the *New York Telephone Company* case which would permit the company to claim a return on the property acquired through the accumulation of a surplus.³²

4. REGULATORY PROCEDURE AND THE RATE OF RETURN

A conspicuous feature of utility regulation is the absence of any well-developed procedure for the determination of the rate of return. An outstanding exception is the Massachusetts Commission, which has dispensed with the formal determination of a *rate* of return and sought to permit the utility such earnings as would maintain the market price of its equity stock at or above the price at which the commission's orders have required the stock to be issued.³³

A reading of the commission decisions reveals wide variations in the attention that is devoted to the rate of return. At one extreme are commissions which merely announce their conclusion as to the rate of return without any statement of the principles they consider controlling or of the factual evidence upon which their finding rests.³⁴ Other commissions illustrate the opposite extreme, explicitly setting forth the principles which guide their consideration and seeking to assemble the factual and statistical data necessary to make an objective, rather than a subjective, finding as to the rate of return.³⁵

³⁰ *Covington & L. T. Rd. Co. v. Sandford*, 164 U.S. 578, 596 (1896); *Smyth v. Ames*, 169 U.S. 466, 547 (1898); *Minneapolis & St. L. R. v. Minn.*, 186 U.S. 257, 268 (1902).

³¹ *United Ry. & E. Co. v. West*, 280 U.S. 234, 251-252 (1930).

³² 271 U.S. 23 (1926).

Apparently the dubiety of the doctrine was borne in on Mr. Justice Sutherland, for in an opinion three years later he most pointedly ignored the company's claim that the rate of return should provide for a surplus. (*Wabash Valley Elec. Co. v. Young*, 287 U.S. 488, 501-502 [1933].)

Obviously, a quite different situation would be created if there were statutory provision for the creation of an earnings-equalization reserve, the reserve to be used only for maintaining dividends, and the presence of the reserve not constituting a claim to any enlargement in the rate base or in the charges to consumers. See Chapter XVII, Sec. 1.

³³ Cf. Chapter XIV.

³⁴ A fair example of this treatment is found in a Texas decision, where all mention of the rate of return is confined to a single sentence: "We find that an annual rate of return equal to 7 per cent of the present fair value of the properties as herein found is adequate." (*Texas Border Gas Co. v. Laredo*, 2 P.U.R. [N.S.] 503, 516 [Tex., 1933].)

³⁵ Thus the Wisconsin Commission introduces a lengthy discussion of the proper rate of return

A majority of commissions have been content to follow precedent, naming the conventional rate of return rather than seeking the rate correct for the particular proceeding. The determination of the rate of return has been said to call for the exercise of an "enlightened judgment," but most of the commissions handle their rate cases with little attention to the evidence that would make a judgment "enlightened." If there is an enumeration of principles, there are commonly no facts to give content to the principles. If there is an assembling of facts, there is no indication of the relation of the facts to the whole, or why those facts lead to one decision rather than to another. In the usual rate case, it is apparently thought that the selected rate automatically becomes the "fair rate of return" on the pronouncement of the correct verbal formula—that the commission has considered all the evidence in the light of the applicable principles, this statement usually being accompanied by quotation from the *Bluefield* case.

There may be some interest in the rates of return which have been allowed or approved in actual rate cases. Table 37 is based on the rates of return in 358 cases in the fourteen-year period from January, 1924, to January, 1938, as reported in the Public Utilities Reports.

TABLE 37

RATES OF RETURN *

Year	Telephone	Electric	Gas	Water	St. Ry.	Combined
1924	7.65	7.92	7.21	7.35	7.50	7.51
1925	7.25	7.50	7.92	7.18	8.00	7.47
1926	6.95	7.16	7.69	7.08	7.75	7.20
1927	7.11	7.04	7.71	7.04	6.00	7.19
1928	6.96	7.00	7.31	6.79	6.97	7.00
1929	6.85	7.50	7.50	6.97	7.50	7.05
1930	7.09	7.02	7.20	6.81	6.58	6.95
1931	7.24	7.10	7.25	6.00	—	7.05
1932	7.00	7.25	7.17	6.43	6.40	6.81
1933	6.16	6.45	6.22	6.19	—	6.28
1934	5.96	6.47	6.68	6.02	—	6.29
1935	6.25	6.17	6.79	6.19	—	6.29
1936	6.39	6.44	6.33	6.06	—	6.31
1937	5.90	6.17	6.29	5.30	6.00	5.93

* Source: Federal Communications Commission, Telephone Rate and Research Department *Factors Underlying the "Rate of Return" in Public Utility Regulation*, p. 61.

These yearly averages reveal a response to changing business conditions, and over the entire period there is a downward trend from nearly 8 per cent in 1924 to less than 6 per cent in 1937. Since these are allowances approved in rate cases, the table probably does not accurately reflect the rates earned, both because actual earnings may differ from the commission's prophecy and because the rates of return of those companies not coming before the commissions and courts probably differ from the rates in the cases decided. These averages do not always reveal those differentials in the rates of return that fit

for the Wisconsin Telephone Company with a statement of its concept of the controlling principles. (13 P.U.R. [N.S.] 224, 313-314 [1935].)

the commonly accepted notions of the relative risks of investment in the different utilities.

This discussion of the rate of return and of the indifferent manner in which it has so often been treated by the commissions and the courts, raises the question whether it is necessary to make a determination of the rate of return. It has already been reported that the Massachusetts Commission dispenses with the formality. The adoption of prudent investment, or one of the other alternatives to the present-fair-value method, would render the blanket rate of return an obsolete tool. Nevertheless, many of the same problems would confront commissions in determining the net income which a utility requires. There would be the same necessity to seek quantitative data to answer quantitative questions. There would still be the inquiry as to the cost of capital and the sums required for the continued solvency of the corporation.

5. CHARACTER AND AVAILABILITY OF THE OBJECTIVE DATA ³⁶

THE IMPORTANCE OF OBJECTIVE DATA. In the actual determination of the rate of return, there has been an absence of the factual and statistical data that would be required for reliably accurate findings. The determination of the rate of return is a quantitative problem; yet an accurate quantitative finding is obviously impossible unless it is based on complete and accurate quantitative data. The Supreme Court's statements in the *Bluefield* case contemplate the analysis of "all the relevant facts"; yet the Court has not been insistent that either the lower courts or the commissions be fully informed as to all the relevant facts before announcing a decision, or that their decision should be adequately supported by specific evidence.

Before rate regulation can be considered satisfactory, the underlying factors with respect to the rate of return must be identified, analyzed, and measured, and their significance relative to the final determination agreed upon. Experience with regulation suggests that this task must be a commission responsibility. If the commissions and courts are insistent upon facts before making their findings, it is almost certain that the utility representatives will collaborate in the presentation of the essential data.

THE AVAILABILITY OF OBJECTIVE DATA. The problem of the rate of return requires the translation of general considerations into specific factual and statistical data and the development of standards which will interpret the significance of the objective data in terms of a rate of return. The accomplishment of this requires the devising of an analytical technique as well as the assembly of factual and statistical data. One approach to these interrelated problems has been suggested in *The Problem of the "Rate of Return" in Public Utility Regulation*, where an attempt was made to develop factual data on the following points:

³⁶ The material for this part of the discussion comes largely from *The Problem of the "Rate of Return" in Public Utility Regulation*, prepared by the Telephone Rate and Research Department of the Federal Communications Commission.

"1. The financial history of the company, and the relationship of its capitalization to the prudent investment in the property.

"2. The historical (actually experienced) costs of debt and preferred stock capital, as shown by the company's records.

"3. The current market yields on the outstanding securities of the company.

"4. Studies of costs of financing by means of various classes of securities.

"5. The general financial market situation at the time of the proceeding.

"6. Data as to bond and stock yields, and capital costs to other companies which are deemed to possess similar risk characteristics.

"7. Statistical studies indicating the effect on investors' demands of the special circumstances and characteristics deemed to affect the amount of risk inherent in the operation of the particular utility."³⁷

The significance of each category of evidence with respect to the reasonableness of the company's present revenue requirements or the costs of attracting new capital investments, when and as needed, is apparent from the preceding discussion. The further consideration of these matters may be organized under three topics: the revenue requirements of the utility, the attraction of competitive capital, and certain special factors influencing the investors' appraisal of utility investments.

REVENUE REQUIREMENTS. *The financial history of the utility.* The first query concerns the relation of the utility's capitalization to its investment in earning assets. The growth of the utility assets should be analyzed; to what extent were they acquired with funds supplied directly by security holders and to what extent were they provided through the reinvestment of earnings? Where significant proportions of the utility's assets have been procured through the reinvestment of earnings, it is pertinent to examine the earnings statistics of the utility to ascertain whether the "plowing back" of earnings left security holders with less than the going rate on their investments. The reasonableness of the proceeds received for security issues should be determined.

Is the utility's capital structure a prudent one? The financial history should answer the question whether the capitalization was kept to the minimum required by the company's operations, and whether the securities issued were reasonably calculated to raise the necessary funds as economically as the conditions of the capital markets and the requirements of the utility permitted.

What is the record of the utility with respect to income and its administration? It cannot be expected that a company will have a conservative capital structure if its income has not permitted it to compete effectively for capital funds. It must be determined whether there has been a conservative administration of the company's revenues, with ample provision for depreciation and the accumulation of such surplus as the earnings permitted. Since a sound capitalization requires a reasonable proportion of common-stock investment, particular attention may be given to the dividend payments on the common stock; have they been reasonable relative to the legitimate expectations of investors, and have they been reasonable relative to the available earnings of the utility?

The historical cost of capital. The historical cost of capital refers to the costs

³⁷ P. 42.

actually experienced. If the utility is to remain solvent, the historical cost of capital, at least as it applies to the indebtedness of the corporation, must be provided; and if the quality of service is not ultimately to deteriorate, the costs of the preferred- and common-stock capital must also be met. Under the prevailing method of fixing a rate of return on a property rate base, there is no assurance that these actual capital costs will be covered, unless there chances to be a coincidence between the rate base and the capitalization. Since the consequences of a failure to meet the actual capital costs of the utility, especially where those costs are on a contractual basis, are so serious both for consumers and the company, a decision leading to that result should be taken only with a full realization of its consequences, and only after it is apparent that the reorganization of the utility is more in the public interest than providing the necessary revenue to permit its continuance with its present capital costs. Of course, a different situation exists if the capitalization of the utility is substantially less than the rate base, for the earnings may then be in excess of the company's needs.

The measurement of the historical cost of capital is usually possible from the company's records. For the utility's bond and preferred stock issues, the historical cost of capital is the sum of the interest and dividend payments, adjusted for the amortization of any discounts or premiums, and plus selling and other incidental costs of their issuance. Where previous issues have been refunded without the full amortization of all discounts, such unamortized balances must be included. The historical cost of common-stock capital will include the amortization of any discounts and any costs of selling, plus such dividend payments as the conditions of the investment market have required to maintain the investment standing of the stock.³⁸

The actual costs experienced by the company are not necessarily to be accepted as the historical cost of capital. The finding of historical cost of capital requires that the cost of capital to other enterprises, similar and dissimilar, be determined in order to provide a standard for testing the reasonableness of the costs actually incurred by the particular utility.

Finally, the historical investigation should reveal what the investment standing of the different securities has been throughout its history. If the investment standing of the securities has been superior, an attempt should be made to determine what factors and circumstances contributed to that desirable state of affairs. If the investment standing of the company's issues has been inferior, it is even more important that the responsibility for that condition be determined.

THE ATTRACTION OF COMPETITIVE CAPITAL. Since the ability to attract capital in competition with other investment opportunities is the primary test of the reasonableness of the utility's earnings, an objective determination of the utility's revenue requirements demands an analysis of the conditions of the investment market, both in its general aspects and with respect to other utility companies. The general level and the trends of interest rates on corporate

³⁸ The prudent-investment school would define the historical cost of common stock money differently, in terms of the dividend payments that were historically necessary at the time the stock was issued in order to make it salable, presumably at par. See Chapter XVII.

debt and yields on stocks should be determined. In particular, the present costs of capital to the particular utility should be compared with the costs to other utilities and to other industries. Such disparities as appear, whether between different classes of securities, between different corporations within the particular industry, or between different industries, may be suggestive of the relative significance of the factors which influence investors' choices. The trend of capital costs affords the means of predicting the probable future costs to the utility.

In determining the market yields on the securities of the utility and other enterprises, it is essential that the yields selected be representative of the investors' responses to utility issues. In general, the yields at the offering prices for new utility issues is a better indication of what investors are demanding than the yield at which a relatively small number of securities change hands on the stock market. A distinction should also be drawn between new and refunding issues, and between the securities of well-established corporations and others less well-known to the investing public. Such an analysis is carried out in terms of market averages, but the investor does not buy an "average security"; he buys a particular bond or stock. Thus the departures from the average must be noted and an attempt made to determine whether the securities of the particular utility are among the "best," or whether some additional inducement is necessary to interest new capital.

To measure the current costs of competitive capital in terms of the prevailing market necessitates an analysis of the factors which influence investors' choices, for the costs of capital are ultimately determined by the choices of investors. The investor is interested first in security—security of principal and security of income. He is interested in stability of income, and it has been reported that there is a sharp increase in the cost of bond money when bond interest is earned less than two, or two and one-half, times.³⁹ Since an investment often serves as an emergency fund and also because the investor may wish to shift from one security to another, the marketability of the security is of importance.⁴⁰ All of the factors affecting the market for securities have an influence on the willingness of investors to purchase securities: the tax laws and the status of the security as a legal investment for fiduciaries and financial institutions will be especially important in determining the breadth of the market. The term of the investment may have an important influence on the necessary interest rate. The enumeration of these factors is enough to indicate that even within a class of fairly homogeneous securities there are differences that may loom large in the final decision of investors.

In the long run the ability to attract capital at an economical price and the ability to maintain a balanced capital structure are alike dependent on the presence of a reasonable proportion of equity capital in the enterprise. The ability to attract common-stock investments is therefore the acid test of the utility's ability to command adequate new capital on advantageous terms.

³⁹ *The Problem of the "Rate of Return" in Public Utility Regulation*, p. 72.

⁴⁰ The marketability of an investment is sometimes discussed in terms of liquidity, but for the market as a whole there is no liquidity. The security can be sold only if there is someone willing to buy at a price equal to, or greater than, the lowest price at which the investor is willing to offer the security. What the individual investor regards as liquidity is only shiftability.

The ratio of the available earnings to the market price of the common stock is an indication of the cost of common-stock capital. This earnings-market price ratio is the resultant of the investors' appraisals of the stock in the light of all of the factors which have been discussed as determinants of investors' choices. This measure is also affected by all the influences, speculative and otherwise, which impinge upon the securities market, so that it is necessary to take the long-term ratio or the average ratio, since it is presumably less conditioned by temporary or speculative influences.

The costs of selling utility securities. On the basis of the reports of the Securities and Exchange Commission, an analysis was made of the costs of financing through bonds, preferred stocks, and common stocks during the years 1935 through 1937.⁴¹ During this period well-known utilities were apparently able to issue reasonable amounts of new securities at yields which approximated those at which comparable securities were selling in the se-

TABLE 38

AVERAGE COST OF FINANCING BOND ISSUES BY ELECTRIC AND GAS UTILITIES
DURING 1935, 1936 AND 1937 *

*Unweighted Average Differentials Between Effective
Cost to Issuing Company and Yield to Investors:*

Classification by Size of Issue	Issues with Yield to Public of:			All Issues
	Less than 3.5%	3.50-3.99%	4.00-4.49%	
Under \$5,000,000	.10%	.21%	.28%	.29%
\$5,000,000-\$9,900,000	.14	.17	.24	.19
\$10,000,000-\$19,900,000	.14	.18	.21	.17
\$20,000,000 and over	.14	.16	.21	.16
Total	.14%	.17%	.23%	.19%

*Unweighted Average Percentages of Financing Costs
to Amount Realized by Issuing Company:*

Classification by Size of Issue	Issues with Yield to Public of:			All Issues
	Less than 3.5%	3.50-3.99%	4.00-4.49%	
Under \$5,000,000	1.6%	3.5%	4.3%	4.3%
\$5,000,000-\$9,900,000	2.6	3.1	4.3	3.3
\$10,000,000-\$19,900,000	2.6	3.1	3.5	3.0
\$20,000,000 and over	2.7	2.8	3.4	2.9
Total	2.6%	3.0%	3.8%	3.1%

* Source: *The Problem of the "Rate of Return" in Public Utility Regulation*, p. 87.

curities markets. According to Table 38, the cost of financing bond issues was quite small, $\frac{3}{10}$ of 1 per cent being a sufficient addition to the yields at market prices to cover the costs of financing.

⁴¹ *The Problem of the "Rate of Return" in Public Utility Regulation*, Chapter VI, pp. 82-104. The Public Utilities Division of the Securities and Exchange Commission publishes annually a report on "Security Issues of Electric and Gas Utilities."

That the average is representative is indicated by the fact that in 75 per cent of the cases the financing costs were .20 per cent or less.⁴²

The data available with respect to preferred-stock costs were more limited. The average difference between the percentage cost to the company and the yield to investors was .17 per cent, amounting to 3.4 per cent of the proceeds realized by the utility.⁴³

With respect to the costs of common-stock financing the results are less definitive. For a utility whose common stock possessed a good investment standing, the total cost would probably have been less than 12 per cent. The issue would be offered at 2 to 3 per cent less than the market price if the security were sold through underwriters, or at 7 to 8 per cent less if the issue were sold through rights offered to existing stockholders.⁴⁴ The underwriting costs were estimated at 5 to 7 per cent for issues sold directly to underwriters, and at 2.5 per cent for issues sold through an offer of rights. Other expenses of the issue would probably have amounted to less than 1 per cent.

SPECIAL FACTORS INFLUENCING INVESTORS' APPRAISALS. On the basis of an examination of 408 bonds, 161 preferred stocks, and 40 common stocks, an attempt was made to measure the influence of capital structure and earnings coverage on the yields at which the respective securities sold on the market.⁴⁵ The Telephone Rate and Research Department's study covered the period 1932 to 1937, inclusive, and was based upon a comparison of market prices for the months of October and the following March with the gross income for the year in which the October fell. The results are tabulated as the yield at market prices for different interest or dividend coverages (and for the percentage of income required) and for different percentages of income absorbed.

The results for the bond issues confirm what is generally assumed as to the advisability of limiting the amount of fixed charges to a reasonable proportion of earnings.⁴⁶ When the interest charges are earned abundantly, more than three times, a greater coverage of fixed charges possesses little significance to investors. As the coverage fell from 3.33 times to 2.50 times, there was an increase in the yield, and when it fell from 2.50 times to 2.00 times the costs rose very significantly. The statistics for the best preferred stocks revealed the expected increase in yield with an increase in the percentage of corporate income absorbed by preferred dividend and prior requirements; however, there was no one point at which this increase in costs became disproportionate.⁴⁷ In the bond study it was found that with a high degree of earnings coverage and equal priorities, there were no significant differences in yields resulting from differences in the contractual interest rate; but in the case of preferred stocks, those stocks with the highest dividend rate, among issues of equal priorities, sold at the highest yields. To a greater extent than was true of senior securities, the yield for common stock rose sharply as the proportion of earnings

⁴² Eighty per cent of the issues over \$10,000,000 had financing costs within this limit.

⁴³ *Ibid.*, p. 90.

⁴⁴ Where the margin between market price and offering price was less than 7 per cent there appeared to be less assurance that the issue would be subscribed.

⁴⁵ *Ibid.*, Chapter VII, pp. 105-154.

⁴⁶ *Ibid.*, p. 128.

⁴⁷ *Ibid.*, p. 141.

available for the common-stock issue declined.⁴⁸ The conclusions from this are significant: in any particular instance, such low rates as may be available on senior securities may be more than offset by the rising cost of common-stock money. And if the proportion of income available for common stock falls too low, the company may find itself caught in a vicious spiral where the small common-stock issue makes it impossible to issue additional common stock even though the cost of senior-security capital is exorbitantly high. On the other hand, it appears that the common stocks of utility corporations are very favorably regarded by investors when the proportion of the common-stock issue is high. Furthermore, financing through a single issue of stock may result in what is, indeed, a very economical capitalization.

The study of the effects of available earnings on the market prices and yields of bonds, preferred, and common stocks leads to the question of the optimum combination of securities (assuming total earnings to be adequate) to assure the lowest total cost of capital for the utility. The correlation of these data for bonds and common stocks is given in Table 39. It here appears that

TABLE 39

ESTIMATED OVERALL COSTS OF CAPITAL AT VARIOUS RECENT DATES AND IN THE MOST FAVORABLE UTILITY SITUATIONS *

For Varying Proportions of Bonds and Common Stock in a Capital Structure Consisting of Only the Two Types of Securities

Capital Structure		Per cent											
Per cent of Bonds	of Common Stock	Average		March		October		March		October		March	
		1934-38	1938	1937	1937	1936	1936	1935	1935	1934	1934	1932	1932
—	100	5.70	6.56	6.44	5.29	5.00	4.77	4.77	6.21	6.56	7.30		
10	90	5.52	6.33	6.13	5.08	4.85	4.68	4.79	6.00	6.29	7.17		
20	80	5.36	6.10	5.84	4.93	4.72	4.60	4.82	5.80	6.10	7.07		
25	75	5.29	5.99	5.70	4.87	4.67	4.57	4.84	5.70	6.01	7.01		
30	70	5.24	5.88	5.58	4.83	4.63	4.56	4.86	5.63	5.91	6.97		
35	65	5.18	5.77	5.46	4.77	4.60	4.56	4.88	5.55	5.83	6.93		
40	60	5.13	5.67	5.36	4.71	4.57	4.57	4.92	5.48	5.76	6.90		
45	55	5.11	5.57	5.29	4.70	4.57	4.61	4.97	5.44	5.71	6.90		
50	50	5.12	5.48	5.32	4.75	4.59	4.67	5.03	5.41	5.68	6.95		
60	40	5.28	5.54	5.54	5.00	4.82	4.89	5.22	5.49	5.77	7.29		
Optimum Point:													
Cost Rate:		5.11	5.43	5.27	4.69	4.57	4.56	4.77	5.41	5.67			
Per cent of Bonds		45	55	46	43	44	30	—0—	52	53			

* Source: *The Problem of the "Rate of Return" in Public Utility Regulation*, p. 152.

during the period under consideration the proportion of bonds in the capital structure of utility corporations should not have exceeded 55 per cent, and that most of the time the proportion should have been substantially less than 50 per cent.

The effects on total capital costs of introducing varying amounts of preferred stock into a capital structure which consists of bonds and common stock are suggested in Table 40. The introduction of preferred stock would not have reduced the total cost of capital in every instance. Where the proportion of

⁴⁸ *Ibid.*, p. 146.

funded debt in the total capitalization was small, there was some economy in the substitution of preferred for common. But the reverse situation may prevail where the bond issue is relatively large. In March, 1937, the substitution of preferred stock for common would have resulted in an increase in cost in every instance but one. If the preferred stock had been substituted for bonds, it appears that there would have been a saving in cost, provided that the pro-

TABLE 40
EFFECT UPON ESTIMATED OVERALL COST OF CAPITAL OF INCLUSION OF
PREFERRED STOCK IN THE CAPITALIZATION *

<i>Per cent of Income Required for Preferred Dividends</i>	<i>Overall Cost of Capital (Per cent), Where the Following Percentages of Income Are Absorbed by Bond Interest:</i>			
<i>As at March 1938:</i>	20	30	40	50
None	5.76	5.50	5.51	6.17
10	5.65	5.41	5.50	6.18
20	5.58	5.44	5.56	6.20
<i>As at March 1937:</i>				
None	4.84	4.71	4.76	5.01
10	4.81	4.74	4.83	5.09
20	4.85	4.82	4.93	5.17

* Source: *The Problem of the "Rate of Return" in Public Utility Regulation*, p. 153.

portion of income absorbed by bond interest was above 30 per cent, but if bond interest absorbed less than 30 per cent, bonds would have been more economical than preferred stocks.

The preceding discussion and the accompanying statistics have been introduced to illustrate the type of analysis that should accompany the determination of the rate of return and to suggest the significance of various data available to regulatory bodies. The specific figures are valid only for the period for which they were calculated, but they reveal significant relationships that are presumably persistent.

6. SPECIAL PROBLEMS RELATING TO THE RATE OF RETURN

INDETERMINATE CAPITAL COSTS. In many instances where the commissions and courts are called upon to establish the proper rate of return the capital costs of the utility are indeterminate. The costs may be indeterminate under several different circumstances: The regulated service may be rendered subject to conditions of joint costs. The rate order may involve only a part of the service area of the utility. The common stocks, and perhaps other securities, of the operating company may be held by a holding company so that there is no market price for the equity securities of the operating company. In all of these instances, it is not possible for the commission to find directly the costs of capital with respect to the service which is being regulated, and resort must

be had to indirect methods in an attempt to secure objective evidence of the proper rate of return.

AN UNECONOMICAL CAPITAL STRUCTURE. Since the regulation of securities and capitalization is not yet a part of the commission's responsibilities in some states, and in other states is only a recent addition to the jurisdiction of the commission, it must often happen that the commission will be confronted with a utility whose revenue requirements could be substantially reduced if its capitalization were better adapted to the preferences of investors and the conditions of the capital markets. Where an uneconomic capital structure is the result of a change in investment conditions and where that capitalization was reasonable under the circumstances that prevailed when the securities were issued, it would be quite unfair if the utility should be prevented from earning a return commensurate with its requirements. On the other hand, an uneconomic and imprudent capitalization requires the commission to decide whether, with such consideration to investors as they are entitled to under the circumstances, the long-run interests of consumers in a rectification of the capital structure are more important than the consumers' immediate interest in the uninterrupted continuity of the service. The commission must also take into account the effect of the failure and reorganization of any utility corporation, however mismanaged in the past, upon the investment quality of all utility securities and upon the capital costs to other utilities.

THE DENIAL OF A FAIR RETURN. Are there any circumstances, other than an uneconomical capital structure, which would lead a commission or a court to deny the utility a right to a reasonable, or a nonconfiscatory, rate of return?

Where the utility has voluntarily established rates which subsequently prove to be unremunerative, the commission may possibly be justified in denying a reasonable return. It is unnecessary to argue that the mere fact that certain rates voluntarily established by the utility are unremunerative does not justify the utility in seeking higher rates from other classes of business in order to make good the deficiency. But cannot the utility increase the unremunerative rates? This would seem to be the obvious and proper solution, but under some circumstances an increase in the rates would be equivalent to an abandonment of the service. If consumers have made substantial investments in order to take advantage of the service offered at the low rates, it would be unjust to force them to pay higher rates.

The utility may be bound by franchise restrictions to the continuance of a rate which makes it impossible for the company to earn a fair rate of return. Although the utility has no legal right to be relieved from the observance of the franchise rates so long as it continues to enjoy any of the benefits under the franchise, it may be wise public policy for the legislature to authorize the commission to waive unremunerative franchise provisions, where their continuance would jeopardize the ability of the utility to render satisfactory service to consumers generally.⁴⁹ Temporary or emergency orders may without impropriety impose unremunerative rates upon a utility company.⁵⁰

WHERE THE UTILITY IS UNABLE TO EARN A FULL RETURN. What policy shall the commission follow when the utility is faced with competition or is operat-

⁴⁹ Chapter VII.

⁵⁰ Chapter IX.

ing in a static or declining market, and is unable to earn a return that includes the full current costs of capital? If the inability of the company to earn the full return is the result of an investment which is out of proportion to the market which the utility is serving, the loss must fall on the security holders, for the responsibility for the unprofitable condition cannot be placed on the consumers. If the inadequate earnings are the result of the company's inability to secure new capital for the modernization or extension of its service, the only solution is probably a reorganization which will write down the capitalization to the level where new capital can be attracted. In the usual situation, the commission is helpless to aid the utility, since any increase in the price will presumably be followed by a reduction in the demand for the utility's service.

DEPRESSION PROBLEMS. Every depression brings demands from consumers for rate reductions at a time when the revenues of utilities can least afford such reductions, and requests from utility companies for rate increases when consumers can least afford a higher price for utility services. The policy of adjusting utility rates so that the company would always earn a fair return and never more, would call for rate reductions in periods of prosperity when the volume of business is large and for rate increases at a time when the gross revenues decline more than costs can be reduced. In the interests of general business recovery, it would be desirable if utility rates could be reduced in periods of depression, both to maintain the demand for the utility service and perhaps to encourage an expansion of the capital investment of the utility at a time when the capital-goods industries are largely unemployed, and also to permit consumers to have a larger proportion of their incomes for expenditure in other directions. Yet the maintenance of the credit of utilities generally requires that they continue interest and dividend payments during depression years. The logical solution of this dilemma is to permit the utility to earn in excess of current requirements during periods of prosperity for the specific accumulation of an earnings-equalization reserve, so that its earnings may fall below a fair return during depression years without any untoward effects upon the credit of industry.

ARE CAPITAL COSTS TO BE ACCEPTED AS UNCHANGEABLE? In the past, regulation seems to have proceeded largely upon the assumption that the commission could only discover what the fair return was and prescribe rates accordingly. This attitude is contrary to the basic philosophy of regulation, which is essentially remedial and forward-looking. It is not only the privilege but the obligation of the commission to seek to determine whether the rate of return is in excess of the lowest that would suffice to provide capital adequate for the rendition of the utility service.

CHAPTER XVI

A CRITIQUE OF THE PRESENT-FAIR-VALUE POLICY

I. TENTATIVE CONCLUSIONS RESPECTING JUDICIAL PRESENT FAIR VALUE

In the earlier examination into "The Present Fair Value Concept of the Courts" certain tentative conclusions were presented as to the nature and significance of present fair value. It was contended, with considerable supporting evidence, that present-fair-value doctrine did not originate historically as a standard for the administrative determination of "reasonable" rates, but arose simply as a statement by the Court of the considerations that prompted it to declare certain prescribed rates "confiscatory." A fuller examination of the problems and usages of rate regulation has indicated that regulation by the legislatures and commissions to secure reasonable rates may be guided by principles and procedures quite different from those which the courts have adopted for judging whether prescribed rates are in effect confiscatory.

No inquiry into the workings of regulation was necessary in order to recognize that the legal theory which founded the present-fair-value doctrine on the "condemnation analogy" was illogical and inconsistent.

A third tentative criticism, to which nothing need here be added, deplored the tendency to minimize the very important differences between the property rights of the utility and the property rights of unregulated businesses. The utility's immunity from direct competition, the stability of the demand for its product, the concern of regulatory agencies for the financial health of the enterprise, and the constitutional protections against the imposition of confiscatory rates, all combine to place the utility in a favored position, legally and economically. There is, consequently, little reason to ignore the investors' appraisal of these advantages in determining what earnings are necessary to retain and attract capital for utility enterprises.

Finally, certain logical inconsistencies in the formulation and application of the fair-value procedure were remarked. These inconsistencies were primarily concerned with the theoretical validity of the reproduction-cost measure of value, the use of the market-value standard for the appraisal of land, and the *double* recognition of increases in the general level of prices through increases in both the rate base and the rate of return. This last practice is so harmful that it will receive further attention in the present chapter.

2. CRITERIA OF EFFECTIVE RATE REGULATION

The present-fair-value policy has been the target for extensive and divergent criticism. What touchstones are available to test the functioning of present

fair value and other proposed policies for the control of utilities' rates and charges, and to appraise the criticisms of those policies?

It is suggested that there are six criteria by which the success of a program of rate regulation may be judged. The effects of the regulation should be *equitable*. The utilities should be always able to *attract new capital*, when and as needed, on favorable terms. Regulation should be administered *efficiently*. The regulated industry should maintain high standards of quality with respect to its *service*. The services of utilities should be *available to a large proportion of the population*. And the results of regulation should conform to principles of *economy*.

EQUITY. The application of the equity standard may be concerned with the relations of consumers and the utility company or of consumers and investors. Those who concentrate their attention on the relation of the consumers to the corporation would remark that it is immaterial to the consumers how the corporation deals with those who provide the funds with which the enterprise is carried on, that investors make their several bargains with the corporation, or rather with each other, and that these contracts may be left undisturbed by regulatory agencies. Those who would look to the natural persons would insist that the bargains between the corporation and the various classes of security holders are of legitimate public interest, and that the utility may be required to make such investment bargains as shall enable the service to be supplied at the lowest overall cost to consumers. The extension of control over security issues and capital is perhaps an index of the wider acceptance of the second point of view. In the analysis which follows it will be assumed that regulation is equitable when it deals fairly with the consumers on the one hand and the investors on the other.

It will be assumed that, at least under all normal circumstances, consumers should provide the efficiently managed corporation with the revenues requisite for the payment of all operating expenses, plus such revenues for security holders as their contracts with the corporation, or their legitimate expectations in the case of the common stock, require.¹

ATTRACTION OF NEW CAPITAL. All would agree that as long as utility industries remain under private management, the utility corporation must be able to attract new capital, as needed, on favorable terms. Regulation must recognize that the utility corporation secures its capital funds largely through the sale of securities, the normal earnings not being sufficient to pay the going rate on outstanding securities and to provide for the normal capital growth of the industry. Furthermore, the utility sells its securities on a competitive basis,

¹ The position of those who would judge equity in terms of the relations of the consumers to the corporation may be summarized as follows: The income of the corporation should suffice to cover the operating expenses plus a return on the present value of the utility plant equivalent to the rate at which capital is seeking investment in enterprises with similar risk characteristics. If the present value of the utility is less than the investment, consumers cannot be asked to pay a return on more than the present cost of providing the service. But if the present cost is more than the investment, the consumers, paying on that higher present cost, are paying no more than the service is currently worth, and a failure of consumers to pay that sum would prevent the utility from being able to stabilize its real income. Present fair value is said to place all costs, operating expenses and return on capital investment, on the basis of the present-day costs of operation.

and its securities must be as attractive as other current investment offerings. Any policy that handicaps the utility in the attraction of capital ultimately increases the costs of the service to consumers. And anything that prevents the utility from obtaining such capital as it requires will cause a deterioration in the quality and adequacy of the service.

ADMINISTRATIVE EFFICIENCY. If regulation is to be considered successful, all problems that require the attention of regulatory agencies must receive prompt consideration. Regulation is not successful if the commission, through inadequate staff or multiplication of responsibilities, is able to consider complaints and petitions only on a hit-or-miss basis. Moreover, whenever economic maladjustments arise, the commission must be able to effect an expeditious solution; rate adjustments, especially, should be made promptly when new conditions render the prevailing charges unfair to either the consumer or the company. Finally, it cannot be said that administrative efficiency has been achieved if judicial review of the commission's orders is commonplace. The commissions' standards must be objective and understood by all; its procedures must be prompt and directed to achievement of economically sound solutions; the results must be fair to consumers and investors.

QUALITY OF SERVICE. The consumer has, in general, received excellent service from his public service corporations, and consequently the question of qualitative standards has not intruded much into the public consciousness. Yet wherever a utility is unable to maintain the accustomed standards of service, consumer reactions clearly indicate that service commensurate with the development of the industries' technologies must be an essential objective of regulatory policy.

AVAILABILITY OF SERVICE. An often overlooked criterion of successful regulation is the proportion of the population which is able to secure the utility services and the intensity of the use which is made of those services. The principal utility services are such essential parts of contemporary standards of living that public policy cannot fail to measure the performance of the industry and its regulatory agencies by the proportion of potential consumers who avail themselves of utility services. The availability of utility services is not simply a matter of the extension of service lines into new geographic areas; it is even more an economic problem of so reducing the cost of service that those to whom the service is physically available will be able to become consumers.

ECONOMY. The standard of economy is concerned with the function of price as the regulator of economic activity. Economy is satisfied when there is such a distribution of productive effort, relative to the consumption or use of goods and services, as to maximize the satisfactions of the community, within the limits set by the available resources. The standard is admittedly an indefinite one, incapable of precise measurement. It is even logically defective in a community characterized by extremes of inequality in the distribution of wealth and income. Yet the standard has a practical significance with respect to regulated industries. In this practical application, economy is concerned with the prices prescribed for, or instituted by, utility companies. The economically correct price is achieved when the costs of each product or service

are just covered by the payments to the producer. But costs are a function of the volume of production, normally decreasing with an increase in the volume of output. The standard of economy is satisfied only when price is so adjusted as to permit the utility to achieve optimum volume and minimum unit costs; and output should be expanded as long as the price which consumers are able and willing to pay is equal to the cost to the utility of rendering the additional service. If price is in excess of this quantum, consumption is uneconomically restricted; if price is less than that amount, consumption is subsidized and unwarrantedly expanded, presumably at the expense of an uneconomic curtailment of production elsewhere.

The above criteria are arranged in the approximate order of their importance. With these criteria in mind, the criticisms of the present-fair-value policy may be examined. For convenience of exposition, these criticisms are grouped around four points of reference: the theoretical criticisms, the criticisms of policy, questions of administrative efficacy, and the economic criticisms.

3. THE THEORETICAL CRITICISMS

The theoretical criticisms require serious consideration in judging the soundness of regulation. On the theoretical level, the criticisms of present fair value are concerned with five matters: the legal theory of rate regulation, the previously mentioned eminent-domain fallacy, competitive prices as an objective of regulation, the nature of the evidence and the character of the intellectual process by which present fair value is found, and the theoretical weaknesses of reproduction cost.

THE LEGAL THEORY OF RATE REGULATION. The outstanding characteristic of utility rate regulation in this country is the absence of a clearly defined legal theory governing its procedures. This has been largely the responsibility of the legislatures. Beyond the general standard of reasonable and nondiscriminatory rates, statutory instructions have been confined to such purely procedural matters as the holding of hearings, and the filing of written findings of fact and opinions in support of orders. The courts have enunciated certain rules respecting rate regulation in the process of judicial review, rules presumably valid only for determining questions of confiscation. Nonetheless the standards of the judiciary have tended to become a part of the regulatory technique of commissions—partly by the ill-advised insistence of the lower courts, partly by the usage of those commissions that have preferred an authoritative standard to reliance upon their own judgment, and partly by the action of a few state legislatures that have enacted the judicial rule into statutory law. The confusion of legal theory has been furthered by the occasional carelessness of the courts in explaining precisely the grounds for their reversal of commissions and by a lack of verbal economy which has permitted the written opinions to include dicta that go beyond the necessities of the case. Other examples of the confusion of legal theory are illustrated by the recurrent emphasis on "value" as the standard for the establishment of rates and by discussions which refer to matters that are pertinent only to the irrelevant "market

-value."² In short, the legal theory of rate regulation is "groping and confused."³

THE EMINENT-DOMAIN FALLACY. The eminent-domain fallacy has already been discussed at some length, but an enumeration of the theoretical objections to present fair value would be incomplete without the inclusion of the most basic of all criticisms of the origins of the fair-value standard. Since the relevant value for eminent-domain proceedings is derived from the earnings of the property, an adherence to eminent-domain principles would prevent any reduction in rates which would reduce the earnings, and thereby the value, of the property. This has been recognized by most of the members of the Court, but the continued return to the condemnation analogy opens the door to the introduction of many evidences of value that are irrelevant to the purposes of rate regulation.

COMPETITIVE PRICES AND PRESENT VALUE. There is one school of thought which holds that regulation should seek the establishment of those prices which would prevail under competitive conditions. The standard of competitive prices would assure, it is said, the full utilization of productive capacity. The maintenance of competitive prices would allegedly result in the optimum volume of investment in the industry. And the final result of adherence to the competitive-price standard in both regulated and unregulated industries would presumably be the most effective distribution of the capital and labor of the community; that is, productive effort would be so allocated that, with full employment of capital and labor, there could be no increase in the production of one commodity or service without a greater loss in total satisfactions through the concomitant decrease in the production of some other commodity or service.

Does competition in the unregulated industries produce the effects which its advocates assert would follow the application of a competitive-price standard to the regulation of utility prices? It must be recorded that there are many exceptions and substantial margins of error. While there is a long-run tendency for prices to be adjusted to costs under competitive conditions, there is no necessary correlation between prices and costs in the short run. Also, the long-run costs to which competitive prices tend to conform are not the costs of production with existing capital equipment but rather the costs of production with the type of capital equipment which is being currently installed. Furthermore, competition is an effective guaranty of efficiency in production only if there exists the threat that the inefficient will be eliminated, and if that threat is removed by the appearance of conditions of imperfect competition, there is no guarantee that prices will approximate costs or that costs will be as low as conditions of efficiency would permit.

Does the present-value method conform to the competitive standard? The characteristics of competition suggested above indicate that the answer must be in the negative. The costs which the present-value method sets forth are concerned with an existing instrument of production that may not conform,

² An example of this confusion is to be found in Mr. Justice Butler's remarks in the *Denver Stock Yard Company* case, 304 U.S. 470, 479 (1938).

³ Clark, *Social Control of Business* (2d ed., 1939), p. 315.

in its cost characteristics, to the modern plant. The total costs of operation, overhead as well as variable, are usually provided for in the rates, even though the full capacity of the plant is not engaged in production. Finally, the prices prescribed are prices for different classes of service. All classes of the utility's service are produced by a common plant and a common organization; overhead costs bulk large and there is no possibility of an accurate determination of the full costs for each service. Certainly the present-value method does not provide either the total income or the price for each category of service that would prevail under competitive conditions.

Is the competitive-price standard either necessary or helpful to the efficient conduct of the utility industry? Where only one utility operates in a given community—the normal situation throughout this country—there is no possibility that public policy would require the liquidation of that corporation, but if public policy should require that that company be replaced by another, there are more direct means of arriving at such a decision than attempting to measure the performance of the existing utility under competitive prices. The competitive relations which the utility has in the market for supplies, labor, and capital provide a standard without the necessity of attempting to find a competitive price for the utility's service and without pursuing the digressions of valuation and the present-fair-value rate base. To achieve a competitive adjustment between utilities and other industries, it is only necessary that the utility's total income be so regulated as to enable it to be a competitive purchaser of supplies, of labor, and of capital.

THE NATURE OF THE EVIDENCE AND THE CHARACTER OF THE INTELLECTUAL PROCESS. The determination of fair value has been described as "the most speculative undertaking" imposed on the courts "in the entire history of English jurisprudence."⁴ The objective, "present fair value," is capable of definition only in teleological terms; it is the pecuniary sum on which the utility is legally entitled to earn a fair return. The fair return is in effect defined in terms of the fair value, for it is normally that percentage rate of earnings on the fair value which is necessary to enable the utility to attract capital.

Much of the evidence which is recognized as pertinent to the determination of fair value is at least once removed from the facts, and consists of opinions and predictions. Indeed, "every figure . . . set down with delusive exactness" is "speculative."⁵ The valuation process involves a consideration of a mass

⁴ "In assuming the task of determining judicially the present fair replacement value of the vast properties of public utilities, courts have been projected into the most speculative undertaking imposed upon them in the entire history of English jurisprudence. Precluded from consideration of the unregulated earning capacity of the utility, they must find the present theoretical value of a complex property, built up by gradual accretions through long periods of years. Such a property has no market value, because there is no market in which it is bought and sold. Market value would not be acceptable, in any event, because it would plainly be determined by estimates of future regulated earnings. Estimates of its value, including the items of 'overheads' and 'going concern value,' cannot be tested by any actual sale or by the actual present cost of constructing and assembling the property under competitive conditions. Public utility properties are not thus created full fledged at a single stroke. If it were to be presently rebuilt in its entirety, in all probability it would not be constructed in its present form. When we arrive at a theoretical value based upon such uncertain and fugitive data we gain at best only an illusory certainty." (Mr. Justice Stone, in *West v. Chesapeake & Potomac Tel. Co.*, 295 U.S. 662, 689 [1935].)

⁵ *Louisville v. Cumberland Tel. & Tel. Co.*, 225 U.S. 430, 436 (1912).

of complex and detailed evidence, most of which is selected for the purpose of "proving" a value commensurate with the interests of particular parties. The admissible evidence has not been specified or defined, and while some of it is irrelevant, even more of it is incompatible with other evidence that is submitted. No rule exists for reconciling or selecting from among the evidence other than the statement that "fair value" is sought. Even the members of a single tribunal are seldom agreed on the reasoning process by which the conflicting evidences of value are transmuted into "fair value." In the end, fair value is either an illogical compromise between conflicting and essentially irreconcilable evidence or an arbitrary decision guided by considerations incapable of precise formulation.⁶

THEORETICAL WEAKNESS OF REPRODUCTION COST. In a search for value, reproduction cost can only indicate the maximum beyond which the "market" or "commercial" value cannot rise. And the reproduction cost of the particular property or instrument is significant evidence of its value only if the property or instrument would be reproduced in identical form. Otherwise the significant "reproduction cost" is the "cost of replacement" with the current equivalent of the property or service instrument that is being evaluated.

Historically, reproduction cost came into the regulatory process at a time when direct evidence of cost was not available; it has been continued in use to measure, not what it would cost the utility to supply the service under contemporary conditions, but what it would cost the utility to provide itself with the present *instrument* of service under present conditions—that is, reproduction cost has functioned as a measure of a highly peculiar and hypothetical cost. On the basis of its historical origin and practical usage, critics of the present-fair-value base contend that the present role of reproduction cost is illogical and unnecessary—in effect, that the rate base can be determined from direct evidence of the actual cost of the service instrument to the utility corporation.

4. CRITICISMS OF POLICY

For want of a better descriptive term, "criticisms of policy" serves to designate four unrelated objections to the present-fair-value procedure: the fact that regulatory policy is largely a judicial rather than a legislative policy, a failure to do complete justice to consumers, the presence of certain elements of unfairness to investors, and the pricing of utility service at more than increment cost.

LEGISLATIVE OR JUDICIAL POLICY. It is a basic principle of utility regulation that the primary responsibility for regulation rests with the legislature. The legislatures, however, have not been specific in prescribing the regulatory procedure by which rates should be determined. When the legislature is silent, the commission, as its representative, should presumably be competent to select the appropriate procedure to establish reasonable and nondiscriminatory rates. Yet in general, the methods of regulation are neither those prescribed by the legislatures nor those devised by their commissions; the courts have in fact

⁶ *Southwestern Bell Tel. Co. v. Comm.*, 262 U.S. 276, 292-296 (1923).

provided the methods of regulation. As will appear from the criticisms of the administrative aspects of rate regulation, the standards which have become habitual with most commissions are not well adapted to rate regulation.

Two remedial courses are open. First, the Supreme Court should adhere to the doctrine that the "legislative discretion implied in the rate making power necessarily extends to the entire legislative process, embracing the method used in reaching the legislative determination as well as that determination itself,"⁷ and it should eschew all statements that can be interpreted as an interference with the legislative method. Secondly, the legislatures should exercise their undoubted power to prescribe the general features of a rate-control procedure that would be adapted to the tasks confronting their commissions.

JUSTICE TO CONSUMERS. Justice to consumers, in the form of reasonable and nondiscriminatory rates, is the fundamental purpose of all utility regulation; yet critics find in the fair-value method an obvious explanation of the failure of regulation in protecting the consumer.

First, there is the inability of the commissions to discover and promptly revise those rates and charges which are unnecessarily high. While other elements are involved, the fundamental difficulty is that rate regulation by the fair-value method is so costly and time-consuming that many matters which should receive the attention of regulatory authorities go uncorrected by default. Furthermore, even those rate cases that do come before the commissions are too often decided with a greater regard for the interests of investors than for consumers, simply because the commission is anxious to avoid the delays of judicial review which might "indefinitely" postpone such benefits to consumers as are expected to accrue from the commission's orders.

Secondly, there are the excessive earnings which the fair-value base permits in periods of high prices. Dissatisfaction is enhanced by the fact that these large earnings accrue chiefly to the common stock and bear no relation to the actual financial requirements of the corporation. Though rates and the rate base are responsive to high prices, they are not equally responsive to low prices, for commissions and courts seldom reduce the rate base in proportion to the decline in prices.

The most serious charges of injustice to consumers grow out of unearned increments which utility corporations are able to claim under the present-fair-value standard. First, the most important of the unearned increments is that associated with the increase in the rate base in response to a rise in the general level of prices. Secondly, the treatment of land values commonly permits the company to earn on a sum far in excess of actual investment. Thirdly, the most valid, and from the point of view of public confidence in regulation, the most serious, criticism is directed against the inclusion in the rate base of imaginary expenditures. These imaginary items cluster around allowances for overhead costs and intangible elements of value, but they are also associated with physical property, as witness the claims of the railroads with respect to land in *The Minnesota Rate Cases*.⁸ It was a similar claim for water rights that goaded

⁷ Mr. Chief Justice Hughes in the *Los Angeles Gas & Electric Corporation* case, 289 U.S. 287, 304 (1933).

⁸ 230 U.S. 352, 450 *et seq.* (1913).

Mr. Justice Black into that outburst which immediately became a classic of regulation literature.⁹ In deference to the judiciary, it should be noted that the grosser claims for unearned increments, those based upon such imaginary expenditures, are commonly received with scant courtesy.

UNFAIRNESS TO INVESTORS. There exists the danger of unfairness and injury to investors when the corporations, and not the investors, are regarded as the parties entitled to a fair return. Certainly the rate base adopted by the commissions and the courts should not characteristically destroy values upon the basis of which investors have made their commitments. Yet this is what might readily happen if the fair-value rate base were rigidly applied. A downward adjustment of the rate base to conform to falling prices would radically reduce the earnings available for junior security holders. Or again, if commissions follow the courts in focusing their attention exclusively on the presently existing property, investors may suffer from an absence of adequate provision for accruing depreciation, with no opportunity to recoup for these deficiencies. The interests of investors are furthered if the corporation is able to earn a reasonably stable income or if it is able to accumulate such surplus and reserves as to offset fluctuations in its revenues. And conversely, the interests of investors are jeopardized so that they may legitimately complain when fluctuations in income are unnecessarily induced, not by economic conditions, but by a deliberately adopted scheme of rate regulation. In sum, there are many circumstances under which a strict application of the fair-value principles of rate control would be prejudicial to the legitimate interests of investors.

PRICING OF UTILITY SERVICES AT INCREMENT COSTS. One alternative to the present-fair-value program of rate regulation, which will be subsequently discussed,¹⁰ is the policy of increment pricing. The essence of the program is to charge the consumer with only the increment (or out-of-pocket) costs of the service, all overhead costs to be financed through payments out of tax revenues. The advocates of this proposal criticize the conventional method of establishing utility charges as a source of economic waste and a deterrent to consumption and production that would be economically and socially justifiable. The inclusion of all costs, overhead as well as increment, in the price of the utility service discourages many consumers who would be willing and able to increase their consumption if they were required to pay only what it would cost the utility to produce the additional units of output. Consumers are prevented from obtaining a service which public policy should regard as desirable. The utility companies are left with idle capacity that is regarded as a clear instance of waste. And the industries that supply the utilities with their capital equipment and other materials are left with a more restricted market for their products and services than would exist if the utilities developed the potential demand that awaits the adoption of the increment method of pricing the utility services.

⁹ *McCurt v. Indianapolis Water Co.*, 302 U.S. 419, 432-433 (1938). Quoted *supra*, p. 473.

¹⁰ Chapter XVII.

5. THE ADMINISTRATIVE EFFICACY OF THE FAIR-VALUE METHOD

The administrative criticisms of the fair-value procedure lead to the conclusion that the program of rate regulation has suffered a "breakdown." These charges may be investigated from three reference points: the administrative aspects of the valuation process, the effects of fair-value rate regulation on the other responsibilities of the commissions, and the consequences of judicial review.

ADMINISTRATIVE ASPECTS OF THE VALUATION PROCESS. The valuation process tends to dominate all the thinking of commissions and companies with respect to rate control.¹¹ This is partly the result of the extraordinarily laborious and time-consuming characteristics of the fair-value method, characteristics which appear to be inherent and inescapable, but it is also a product of "the maze of formulas and the jungle of metaphysical concepts" that beset the determination of "fair value."¹² So vague are the controlling principles and so involved are the data out of which the fair-value figures are sought that forty years' experience has not produced unanimity of opinion as to the meaning of many of the terms and concepts that presumably "measure" value. The commission is asked to consider the hypothetical cost of constructing a property that never was constructed and never would be reconstructed, by methods that have not been used, at prices and costs which are largely synthetic.¹³ Experts of varying qualifications, selected commonly with a foreknowledge of how they will testify, present evidence which is inconsistent and which conflicts with the testimony of others, even when they purport to be working on the same assumptions. This may be illustrated by a brief consideration of a segment of the *New York Telephone Company* case:

"Here are six different parties all trying to determine the legal return to which the New York Telephone Company is entitled and the range of guesses is nearly 100 per cent. The separate estimates of fair value June 30, 1926, fair rate of return, and profit to which the company was entitled, all based on intrastate business, were:

ESTIMATES OF FAIR PROFITS FOR NEW YORK TELEPHONE COMPANY

(*Intrastate business, July 1, 1926*)

	Fair value	Rate	Fair Return
Majority of Commission	\$366,915,493	7%	\$25,635,000
Statutory Court	397,207,925	7%	27,804,555
Minority of Commission	405,502,993	8%	32,480,000
Master's report	518,109,584	8%	41,448,777
Company claim based on Whittemore appraisal	528,753,738	8%	42,300,299
Company claim based on Stone & Webster	615,000,000	8%	49,200,000

¹¹ This is not so where the regulated utility operates under competitive conditions; the railroads and motor carriers are the obvious exceptions.

¹² Mr. Justice Black, dissenting, in *McCart v. Indianapolis Water Co.*, 302 U.S. 419, 428-429 (1938).

¹³ See *Customers v. Worcester Elec. L. Co.*, P.U.R. 1927C, 705, 709-710 (Mass., 1927).

• "In our opinion the wide spread between these estimates proves the impossibility of any degree of certainty in rate making. Regulation is lost in the quicksands of many hypotheses.

"The single item of 'going value' is estimated all the way from a grudging \$10,000,000 allowed by the Commission in deference to the Courts up to approximately \$54,000,000 included in the Stone & Webster appraisal."¹⁴

Faced with irreconcilable evidence presented at hearings extending over months or even years and filling thousands of pages of record, commissioners cannot be expected to arrive at determinations that will be acceptable. Without rules to guide their decisions, conclusions must, in a very real sense, be "arbitrary." Admittedly "fair value" must be a "judgment concept," and the derivation of fair values as a part of the regulatory process might be tolerated if no more satisfactory process of rate regulation could be devised, and if the fair values once determined were "final." But the final blow to administrative efficiency is the fact that these laboriously determined fair values may be obsolete before a rate order founded on them can become effective. The end result of the valuation process may be the establishment of reasonable rates; but it is often only the prelude to extended and expensive litigation.

FAIR VALUE AND OTHER COMMISSION RESPONSIBILITIES. The regulation of rates is only one of the responsibilities of the modern commission. And the conduct of lengthy rate cases is only one of the means by which the commission can assure the maintenance of reasonable rates and charges. One valid charge against the fair-value program of rate regulation must be its interference with the full and effective functioning of commissions as impartial public bodies charged with furthering the mutual interests of investors and consumers. The commission should keep itself constantly informed as to the financial status of all utilities under its jurisdiction, and it should institute promptly proceedings to revise any charges which are other than reasonable. The regulation of capitalization and securities, the supervision of accounts and reports, the policing of service standards, and the study and analysis of economic conditions, are all vital parts of the regulatory program, and these tend to be neglected when valuation proceedings absorb the funds and energies of the commissions.¹⁵

JUDICIAL REVIEW OF RATE CASES. The determination of the rate base has been the most prolific source of litigation between the utilities and the commissions. The first result of judicial review is delay in the institution of rates which the commission has found to be reasonable. The delay is really greater than the time consumed in the proceedings before the courts, for the fear of

¹⁴ New York, *Minority Report of the Commission on the Revision of the Public Service Commissions Law*, Leg. doc. No. 75 (1930), pp. 265-266.

¹⁵ It should not be forgotten that the valuation process imposes a tremendous cost on both consumers and investors. The energies of managements should not be diverted from their proper function of assuring the efficient conduct of the utility service, but such is the consequence of every big rate case under the fair-value standard. The indirect costs of regulation in interfering with the efficient conduct of the utility industries cannot be estimated. The direct costs fall on the whole community in the form of taxation to support commissions and courts, and on the consumer directly when the utility is allowed to charge the consumer with the costs involved in the conduct of rate cases before commissions and courts. The losses to the investor are indirect but nevertheless real; they are the result of the distraction of management and of the ill-will of consumers for the company, joint products of the contentious method of rate making.

judicial review is principally responsible for the extraordinary length of time absorbed by proceedings before the commissions. Regulation can be effective only if rate revisions can be made promptly in response to changing conditions; yet the prevailing practices with respect to rate making almost always require many months and sometimes extend over long years.¹⁶

Appeal to the courts does not result in a judgment by men who are better qualified to determine the proper rates and charges for utility companies. Unless provision is made for the certification of the record before the commission, the taking of evidence on the entire case may be repeated. The courts, both lower and higher, have crowded dockets and cannot usually give as much time to the case as the commission, or if the courts do give the case detailed consideration, the decision is usually long delayed. Finally, the courts do not consider it within their province to establish the rates to replace those which are disapproved. In short, the controversy is transferred from a tribunal of specialists whose full time and attention are concentrated on problems of utility regulation to a tribunal whose attention must be absorbed with a multitude of cases, and the evidence is heard and the decision is rendered by individuals having no special experience or peculiar competence in matters of utility control. In utility regulation, the commissions rather than the courts have, or should have, the qualifications that a final tribunal should possess.¹⁷

The effects of judicial review upon the functioning of the commissions have already been suggested. Rate cases are avoided; those rate cases that arise absorb an undue amount of the time and energy of the commission; the rendering of a decision in a rate case is delayed by the necessity of considering "all of the relevant evidence," and the fear of judicial reversal leads to the consideration of much that is irrelevant because there are no guiding principles as to what evidence is, or is not, relevant; since the utilities usually possess advantages in an appeal to the courts (through a long purse and expensive counsel), there is a natural tendency for the commissions to resolve doubts in favor of the companies.

In summary, the abuses of judicial review extend far beyond the particular cases that reach the courts and the reprimands that the commissions receive when the appeal results in a setting aside of their rate orders. The precedents established in the courts, although ill-adapted to the requirements of commission procedure, become obstacles to the future work of the commissions. The fear of judicial disapproval tempers all of the proceedings of the commissions, making them less independent and effective in their defense of the legitimate interests of the consumers. Nullification of commission regulation by judicial review is one of the charges which critics bring against the fair-value principle of regulation.¹⁸

¹⁶ See *St. Joseph Stock Yards Co. v. U.S.* 298 U.S. 38, 88-91 (1936).

¹⁷ This position was taken long ago by Mr. Justice Bradley in opposition to the Court's first decision affirming the right of judicial review of rates established by legislative authority; see *Chicago M. & St. P. Ry. v. Minn.*, 134 U.S. 418, 465-466 (1890).

¹⁸ *Minority Report of the Commission on the Revision of the Public Service Commissions Law*, New York, Leg. doc. No. 75 (1930), p. 262.

6. ECONOMIC CRITICISMS

The economic criticisms of the fair-value method of rate regulation call into question the very attributes of the method upon which its defenders rest their case.

THE ATTRACTION OF CAPITAL. The fair-value method is not inconsistent with the attraction of capital, as the past history of the industry demonstrates. But it is asserted that the fair-value technique is ill-adapted to this purpose, and that it does not attract capital as economically as possible. What validity has this criticism? The answer may be sought in a consideration of what makes securities attractive as investments. The investor is seeking security of principal, certainty of income, an income equal to, or better than, the yield generally available on comparable risks, and marketability or liquidity if he should wish to convert his investment into cash. How are these attributes safeguarded by the fair-value method?

The security of principal which the present-value method seeks to attain is the security of real purchasing power that has been invested in the plant and property of the corporation. By increasing the rate base when prices rise, and by decreasing the base when prices fall, it is contended that the value of the utility's assets remains stable in terms of the general price level. The increase in the rate base makes available a larger return in terms of dollars, but this larger return is presumably the equivalent in purchasing power of the smaller number of dollars that constituted the fair return on the previously smaller base. The number of dollars available for each class of security is not considered pertinent to the determination of the fair return.

Assuming that a return varying with the price level is desirable to attract capital, it has been suggested that there are more direct means of achieving that adjustment than the revaluation of the entire property of a utility. The rate base might remain unchanged and the rate of return could be varied so as to adjust net income to changing price levels. It would also be possible to follow the Massachusetts procedure—if the securities of the utility have been subject to continuous regulation and there is some assurance that the outstanding securities are representative of actual investment—and, disregarding both the rate base and the rate of return, seek to permit net earnings sufficient to pay interest on the corporate debt and such dividends on the stock as will keep the market price of the stock at whatever level public policy decrees.

The critics of the fair-value method deny that a return varying with the price level is necessary to attract capital. They point out that in a period of rising prices, the entire increment in the fair return resulting from the enlarged rate base, plus a possible increase in the percentage rate of return, accrues as a wind-fall profit to the common stockholders, that the common stock acquires a speculative character, and that investors who purchase the stock at the relatively high prices are doomed to sustain heavy losses in the market value of their investment if they continue to hold the stock when prices fall. In periods of falling prices, the income measured by a fair rate of return on the fair value of the property may be insufficient to permit the utility to cover its fixed

charges and will certainly be insufficient to permit the payment of those dividends which were reasonably expected by stockholders. The result of these fluctuations in the earnings of the utility and the accompanying rise and fall in the market prices of its securities will make the issues of the utility excessively speculative, impose unwarranted losses or bestow undeserved gains of both income and capital value on stockholders at different times, and, finally, increase the cost of capital, not only to the particular company, but to the entire industry. In short, the financial soundness of the company and the economical raising of capital are not the goals of the fair-value standard.

THE RATE OF RETURN. The rate of return has been the neglected partner in the fair-value team of rate control. The principles that should guide its determination have never been embodied in concrete statistical or factual form. Although announcing that the rate of return should reflect the cost of capital to the particular company, commissions have commonly adopted a conventional rate of return, relying on precedent rather than on objective data. There is no possibility of more than a chance coincidence between the cost of capital to the utility and the rate of return which is used to measure its right to income.

A second serious criticism is that the rate of return is usually prescribed as a blanket return which is often unrelated to the financial structure of the utility. Thus a 6 per cent rate of return may permit earnings of 6 per cent to the common stock if there is only one class of security outstanding; or 8 per cent if half of the capitalization is in 4 per cent bonds; or 11 per cent, if one-half of the capitalization consists of 4 per cent bonds, one-quarter of 5 per cent preferred stock, and one-quarter of common. The use of a blanket rate of return is one basis for the charge that the fair-value method ignores the financial needs of the utility.

A third criticism of the rate of return concerns its relation to the rate base. The rate of return is presumably "equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties."¹⁰ Assuming that it is possible to find other investments attended by corresponding risks and uncertainties, the rate of return is almost invariably expressed with reference to the *investment* in those comparable enterprises rather than with reference to the "present value of their property." If at a time when the rate base has been increased to reflect an increase in the general level of prices, the rate of return also reflects the increase in the rate of earnings on actual investments in other enterprises, there is a double adjustment for the changed conditions, permitting the utility an extravagant return. And conversely, a low rate of return on a present-value base that is substantially below the actual investment in the enterprise permits a proportionately smaller return to the utility than would result from the same reduced rate of return on an actual-cost base.

A FINANCIALLY UNSOUND PROCEDURE. The criticism that the fair-value method is financially unsound may be considered with respect to two particu-

¹⁰ *Bluefield W. W. & Imp. Co. v. W. Va.*, 262 U.S. 679, 692 (1923).

lars: the failure to adjust the return to the financial requirements of the utility, and the fact that rates which permit the utility to prosper may yet be technically confiscatory.

The failure to adjust the return to the financial requirements of the utility are implicit in several particulars of the fair-value method. The rate base may be quite unrelated to the actual investment in the utility property or to the securities that have been issued to finance that investment. The financial obligations of the normal utility are at least partially on a contractual basis—interest on the debt and stipulated dividends on the preferred stock—yet the allowance of a blanket rate of return may either permit an extravagant rate of earnings to the common stock equity or may leave the utility with insufficient revenue to meet its fixed charges.

One of the absurdities resulting from the application of the present-value standard is the claim by utilities that the rates which they are voluntarily charging are confiscatory. Again and again corporate executives have testified that the rates they were charging were insufficient to provide a fair return even on the actual investment (which was said to be less than fair value).²⁰ Of course, it is not to be concluded that a fair return on fair value, such as would be approved by either the commissions or the courts, would therefore be in excess of the revenues which a utility would be able to earn if it charged rates calculated to maximize its net return. But the fact is that the fair-value procedure permits companies to submit, and legally substantiate, claims for excessive valuations, so excessive that the companies recognize that it would be contrary to their pecuniary interests to charge the rates that might be justified on the alleged fair value. Such a situation apparently came before the Supreme Court in *Lindheimer v. Illinois Bell Telephone Company*.²¹

THE UNIFORM RETURN POLICY. The fair-value theory assumes that the scale of rates will be adjusted so that the utility shall earn only a fair return on the fair value of its property. This "uniform return policy" ignores the effects of cyclical fluctuations on the net revenues of utility companies. The presence of heavy fixed charges renders the net revenue of the utilities especially sensitive to changes in the volume of business. The strict maintenance of the uniform return policy would require a decrease in rates during periods of prosperity, when the demand for utility services is strong and the output high, and an increase in rates during periods of depression to offset the decline in sales. In the past, this policy has not been strictly applied, for the commissions have been inadequately staffed to initiate promptly the necessary proceedings when the net revenues of the utilities rose above the fair-return level; and in periods of depression, the decline in gross revenues has usually been principally attributable to a decline in industrial sales, and commissions have quite consistently ruled that the utility might not burden other classes of consumers to carry the overhead occasioned by the industrial market.

²⁰ *Minority Report of the Commission on the Revision of the Public Service Commissions Law*, New York, Leg. doc. No. 75 (1930), p. 271.

²¹ 292 U.S. 151 (1934). *Supra*, pp. 393-394.

The community generally would be benefited by a policy of low rates in depression and higher rates during prosperity: there would be a fuller utilization of productive capacity and less unemployment; there would be a release of consumer purchasing power; the industrial users of utility services would benefit from lower operating costs during depressions; the complementary market for appliances to be used with utility services would be more stable with increased stability in the sale of the utility product; and, finally, by avoiding the excessive peaks of the prosperity period, there would be a better adjustment of utility capacity to the requirements of its market.

In the past, commission policy has been closer to a "uniform rate policy" than to a "uniform return policy." Because rates are not increased to offset the decline in return during periods of depression, commissions quite generally accept more than a fair return during periods of prosperity as not improper; and conversely, it is argued that since they are not permitted enlarged earnings during periods of prosperity when unregulated enterprises enjoy large profits, the utilities should not be required to accept reduced earnings during depressions. This policy probably results in higher costs to the consumer than would a more deliberately planned arrangement to assure the financial soundness of utilities.

THE RATE BASE AND CHANGING PRICE LEVELS. One alleged advantage of the present-fair-value rate base is the fact that the base is adjusted upward with an increase in the general level of prices and downward with a decline in the price level. The change in the rate base, and any corresponding change in the rate of return, is said to give stability of utility income and utility prices in terms of purchasing power.

Stability of income in terms of purchasing power is said to benefit the consumer, the investor, and the corporation. And it is also argued that the entire economy would share in these benefits. Why, it is asked, should the consumer be required to pay more for a utility service than it would now cost a new utility to supply that service? If the consumer is asked to pay more than the current cost of the service, it is contended that there will be dissatisfaction with the utility and a growing demand for the establishment of competing publicly owned enterprises. If the decline in costs is the result of a fall in the general price level, investors will not be injured by receiving a smaller dollar income, since the dollar will have an enlarged purchasing power. The corporation will be able to manage with the smaller dollar income, for its costs, including the costs of capital, will be smaller in proportion to the decline in the dollar income.

A preliminary observation on the validity of these arguments would call attention to the fact that there are great disparities in the responses which different prices make to changes in general economic conditions. Regulated prices are not alone in failing to adjust to movements of the general price level, especially to declines in the general level of prices.

Furthermore, it should be noted that the fluctuations in the construction costs of utility properties do not coincide with the changes in the general price level. Thus in the testimony before the New York Commission on the Revision of the Public Service Commissions Law in 1930, the following relations

between the general price level and the costs of utility construction for the year 1929, taking 1913 as the base, were reported: ²²

Bureau of Labor Index of Wholesale Prices	150
Construction costs of a typical water supply plant	177
Construction costs of a typical electrical plant	180
Construction costs of a typical gas plant	180
Construction costs of a typical telephone plant	190
Construction costs of a typical street railway plant	222

It may be noted that these construction costs differ from the fair-value figures in making no allowance for such items as land values, intangibles, and similar items, and so it is not unlikely that the fair-value rate bases would show greater departures from the index of general prices. The rate base fluctuating with changes in utility construction costs would not produce a fair return that would be stable in terms of purchasing power of the dollar.

The argument for a rate base fluctuating with changes in the general level of prices might be countered with questions as to why the utility requires additional income during periods of rising prices and how it can manage with a smaller dollar income in periods of falling prices. Changes in the price level affect the utilities' costs in two ways: there are changes in operating expenses and there are changes in the "going rate" on investments. The changes in operating expenses would normally be reflected in rate changes without any necessity for a change in the rate base. Changes in the "going rate" on investments, or the cost of capital, affect the utility that has part of its investment in fixed interest and dividend securities only with respect to its common stock. For the common stock, adjustments of the dividend and earnings rates are desirable, both for the protection of the corporate credit when prices are rising and for the benefit of consumers when prices are falling. However, a change in the earnings available to the common stock can be accomplished without a laborious revision of the entire rate base.

Recognition of the contractual obligations of the corporation to its bondholders and of its economic obligations to the preferred and common stockholders—namely, to pay those returns upon which the legitimate expectations of the investors are based and in accordance with which they purchased their holdings in the corporation—is called in question by the supporters of the fluctuating rate base. Why, it is asked, should the investors in utility corporations be protected from changes in income that come to all other investors? To which the answer is that the protection of the legitimate expectations of the investors is important to the consumer, for in proportion as the risks of utility investments are diminished, the lower cost of capital will benefit the consumer.

MANAGERIAL EFFICIENCY. There is no provision in the present-fair-value procedure to assure or encourage efficiency in the conduct of utility enterprises. Such stimulus to efficiency as exists comes from the defects of the system. In theory, an increase in utility earnings above the level of the fair return would

²² New York, Leg. doc. (1930), No. 75, p. 347. This was the testimony of Mr. Olson, vice-president of the American Appraisal Company.

lead to a downward adjustment of rates, but practically the tasks of valuation and rate revision are so laborious, so time-consuming, and so exposed to obstructionist tactics by the utilities, that commissions hesitate to undertake rate revisions unless driven by public opinion, and even where they have the will to make revisions, the changes in rates are likely to follow long after the appearance of the surplus income. Under the doctrine of the *New York Telephone Company* case,²³ the utility is entitled to keep all of the income derived from the charging of lawful rates. Thus, knowing that rate revisions will be delayed, the management is encouraged to maximize its income under the existing rates, or to increase that income by promotional rate reductions. Other than the "lag" in rate adjustments, the fair-value program makes no provision for the encouragement of managerial efficiency.

7. CONCLUSIONS

The critique of the present-fair-value method of rate regulation has presented criticisms which are both valid and invalid; some may impress the reader as of little import, and others must be acknowledged to be of great importance.

Judged in terms of the criteria of effective regulation, the score for fair-value is not impressive. By focusing attention on the corporation, the effects of rate control on investors are ignored or relegated to a position of secondary importance. Unearned income and undeserved losses may be visited upon consumers and investors. The present-fair-value method has not been an equitable method of regulation under the circumstances that have prevailed in the past and does not promise greater fairness for the future.

While the present-value scheme has attracted capital to the industry in the past, that seems to have been more a result of defects in its application than a consequence of adherence to its principles. There is good reason to believe that the costs of attracting capital to the utility industries could be reduced by other programs of control.

In terms of administrative efficiency, the present-value method is unsatisfactory. Not even its staunchest defenders have ever argued that regulation according to the fair-value standard was capable of simple and direct administration; they have executed a strategic retirement behind the statement that the difficulties encountered are no excuse for failure to undertake the necessary responsibilities of regulation. Critics have described the present-value procedure, from the administrative point of view, as "costly," "time-consuming," "litigious," and "futile"; and it must be acknowledged that all of these criticisms have hit on a broad target.

The operation of utilities, at least since the industry passed the promotional stage, has been characterized by the maintenance of high standards of service. This achievement cannot be credited to any allegiance which either regulatory authorities or companies have shown to the fair-value method of rate regulation.

The record of utility industries and regulatory authorities is less than per-

²³ 271 U.S. 23 (1926).

fect with respect to the availability of utility service. It is true that modern utility services are more widely used in this country than in other countries, but such would be a normal consequence of our higher standard of living. Progress in that direction, however, is dependent upon the price of the utility service and the availability of cheap capital for expansion of the service. Thus the question is whether the present-value method of rate regulation is likely to make capital available at the lowest possible cost and whether it will result in the lowest practical level of charges. Thus analyzed, the fair-value method seems to afford a poorer performance than might be expected with other possible methods of rate regulation.

The criterion of economy has been analyzed by considering the economic arguments for and against the adjustment of the rate base to changing price levels. In that discussion it was pointed out that utility prices do not stand alone in their inflexibility to changing economic conditions. Furthermore, changes in the costs of utility construction do not necessarily correspond with changes in the general level of prices; nor does the present-value method assure rate adjustments which will accurately reflect the changes in the cost of producing the utility service.

On the theoretical level, the fair-value program of regulation encounters unanswerable objections. The legal theory is accurately characterized as vague and inconsistent. The eminent-domain fallacy is found to have infected the whole body of regulatory thought with respect to the fair-value standard. Finally, the nature of the inquiry and the character of the evidence presented in the search for fair value are not calculated to afford a scientific or satisfactory method of rate control.

With regard to considerations of policy, the most telling criticism is the obvious historical fact that the present-fair-value method was designed by the judiciary to serve the purpose of testing whether rates were confiscatory. It was not designed, and is not capable of serving effectively, as a method of establishing reasonable rates by administrative commissions. Perhaps this criticism can be most cogently summarized by calling attention to the fact that present fair value is a method of *rate regulation*, whereas the commissions should be free to work for the benefit of consumers and the industry along lines of *rate planning*. The substitution of regulation for planning has eclipsed some of the most hopeful possibilities in the entire program of governmental supervision of public utilities.

It is on the economic level that the judgment of the fair-value method of rate regulation is most adverse. Whether attention be directed to the costs of attracting capital, the principles that govern the determination of the rate of return, the relation of the regulation to the financial needs of the regulated industries, the adjustment of the utilities' gross revenues to changing business conditions, the effect of changing price levels on the rate base, or the encouragement of managerial efficiency, the conclusions are not favorable to the present-value method.

In short, while the public service industries have developed and prospered, some more and some less, under what has purported to be adherence to the present-fair-value standard, the results have not been such as would foreclose

the desirability of considering opportunities for improvements in regulatory techniques. The following chapter will be devoted to a brief consideration of some of the alternative methods of rate regulation that have been tried or proposed.

CHAPTER XVII

ALTERNATIVES TO THE PRESENT-VALUE RATE BASE

The criticisms of the present-value rate base have naturally given rise to a number of remedial proposals. The foremost rival of present fair value has been the prudent-investment program, which has been advocated by members of the Supreme Court and supported extensively by both practicing and academic regulatory authorities. Another school of critics favors the explicit adoption of reproduction cost as the measure of the utility's right to earnings, and adduce certain economic arguments in support of this proposal. The Washington Plan is the best-publicized example of the application of service-at-cost principles to the problem of rate control, and has been hailed as the means of reconciling the interests of utility and consumers. A recent proposal is that advanced by the "increment-cost school," namely, that utility rates should be based on the increment costs of rendering the service, with all overhead costs covered through subsidies from tax revenues. It is the position of the present writer that at the present time the problems of rate regulation can best be solved by the adoption of a *modified* prudent-investment program.

I. PRUDENT INVESTMENT

THE DEVELOPMENT OF THE PRUDENT-INVESTMENT PROGRAM. The education of the public in the principles and program of the prudent-investment doctrine has been the work of a few individuals. When the matter of judicial review of rates established by legislative authority first presented to the Supreme Court the question of the basis upon which railroads should be permitted to earn a return, there was a disposition on the part of some members of the Court to adopt a cost basis.¹ In more recent times, the names of Mr. Justice Brandeis, Commissioner Eastman, Dr. John Bauer, and Professor James C. Bonbright have been associated with the active advocacy of prudent-investment principles.

The Massachusetts commissions have sometimes been thought to apply the prudent-investment method to the regulation of public utilities in that state,² and indeed one of the earlier pronouncements for prudent investment is to be found in the opinion of the former Public Service Commission in *The Middlesex and Boston Rate Case*.³ And in 1917, Professor Goddard, appraising the existing principles of rate regulation, urged the adoption of "efficient investment" as the rate base:

¹ Justices Harlan and Field, dissenting, in *Stone v. Farmers' Loan & Trust Co.*, 116 U.S. 307 (1886).

² The reasons for concluding that the Massachusetts method of regulation cannot be accurately described as conforming to the prudent-investment program have been set forth in Chapter XIV and need not be summarized here.

³ Ann. Rep. Mass. P.S.C. 99, 108 (1914).

"... The basis for all dealings involving purchase and rate making should be, not actual cost, not reproduction cost, not market value, not stock and bond issue. It should be what has been well called the 'efficient investment,' i.e., the actual amount honestly and prudently invested in the utility, under normal conditions, no more, no less."⁴

Mr. Justice Brandeis' famous separate opinion in the *Southwestern Bell Telephone Company* case, attacking the doctrine of *Smyth v. Ames* as economically and legally unsound and advocating the adoption of a cost standard for the establishment of reasonable rates and for testing whether prescribed rates are confiscatory, is a classical expression of the prudent-investment principle. The opinion stimulated renewed discussion of the principles of rate regulation, and in the years following 1923 it served as the rallying point for those who became increasingly dissatisfied with the ineffectiveness of regulation under present-fair-value methods. Among those engaged in the administrative tasks of regulation, Commissioner Eastman of the Interstate Commerce Commission has been foremost in pleading the cause of prudent investment.

THE PRUDENT-INVESTMENT PRINCIPLE. The principles governing the prudent-investment method of rate control have been succinctly stated by Mr. Justice Brandeis:

"... The thing devoted by the investor to the public use is not specific property, tangible and intangible, but capital embarked in the enterprise. Upon the capital so invested the Federal Constitution guarantees to the utility the opportunity to earn a fair return. . . .

"The investor agrees, by embarking capital in a utility, that its charges to the public shall be reasonable. His company is the substitute for the State in the performance of the public service; thus becoming a public servant. The compensation which the Constitution guarantees an opportunity to earn is the reasonable cost of conducting the business. Cost includes not only operating expenses, but also capital charges. Capital charges cover the allowance, by way of interest, for the use of the capital, whatever the nature of the security issued therefor; the allowance for risk incurred; and enough more to attract capital. The reasonable rate to be prescribed by a commission may allow an efficiently managed utility much more. But a rate is constitutionally compensatory, if it allows to the utility the opportunity to earn the cost of the service as thus defined."⁵

The prudent-investment principles may be analyzed from three points of view: the legal, the economic, and the administrative.

Legally, the prudent-investment method begins with a different concept of property from that which is implicit in the present-value method. The present-value method tends to regard property rights of utility corporations

⁴ Goddard, "Public Utility Valuation," 15 *Mich. L. Rev.* 205, 223 (1917).

In elaborating on the meaning and significance of "efficient investment," it was stated that "efficient investment" should exclude all worn-out and cast-off equipment, all losses from mismanagement, all earnings reinvested in the plant (even though those earnings might have been distributed to the stockholders as dividends), all depreciated property for which no reserve has been accumulated, and any property acquired in advance of the public use thereof. In inaugurating the program, it was suggested that the attempt be made to discover the costs as of the date when the units of property were installed.

⁵ *Southwestern Bell Tel. Co. v. Comm.*, 262 U.S. 276, 290-291 (1923).

as entirely equivalent to those which any private business might possess, at least with respect to the company's rights to reasonable earnings. It is said that the company may not be deprived of the *value* of its property, although any rate order which decreases the net earnings of the utility reduces the *value* of the property. On the contrary, the advocates of the prudent-investment program do not associate property rights with "value." The rights of the utility with respect to its earnings are measured in terms of the *investment* in the property. In their view, no taking of property occurs so long as the utility is allowed to earn the "cost of service," including the cost of its capital. There can be no "taking of property" because the investor has "agreed," by embarking his capital in the enterprise, that the utility's charges shall be reasonable. From a practical point of view, the concept of property to which the advocates of prudent investment adhere emphasizes the rights of the security holders rather than the rights of the utility as an abstract and independent entity.

Economically, the principles of prudent investment depart from those that are fundamental to the fair-value method. Essentially, this difference is found in the fact that prudent investment rests its determination of rates upon actual past costs, while the present-value method calculates utility charges on the basis of actual costs only with respect to operating expenses, the costs with respect to the capital investment being hypothetical present costs. The prudent-investment program is more explicit than the present-value method in recognizing that the ability to attract new capital is the ultimate test of the reasonableness of the utility's earnings. And finally, the prudent-investment method would regulate charges according to the needs of the utility, as measured by the contractual interest on outstanding bonds, the stipulated dividends on the preferred stock, and the dividend rate on the common stock that was required to attract capital to that investment.

Inasmuch as the prudent-investment proposal arose from the administrative inadequacies of the present-fair-value method, it is not surprising that the scheme seeks to place the administrative tasks on the simplest possible basis. The stability of the rate base is combined with certainty as to the rate of earnings. Thus it is expected that the investors' added security will enable the utility to attract capital on terms equally, or more favorable than those which would prevail if the rate base were made to fluctuate with changes in prices.

THE PROPOSED NEW YORK BILL. Since prudent investment has not been a method of rate regulation followed with precision by any regulatory body, it is necessary to turn to other than case sources for a description of the program. Among the unofficial authorities on public utility regulation, Dr. Bauer has been the most untiring in presenting the prudent-investment program.⁶ In 1929 and 1930 a New York commission was engaged in a study of utility regulation, and at the conclusion of its work there were presented both a majority and a minority report, the latter recommending a prudent-investment program and submitting a bill for its enactment.⁷ Although the bill failed of

⁶ *Effective Regulation of Public Utilities* (1925), and with Gold, *Public Utility Valuation for Purposes of Rate Control* (1934).

⁷ *Minority Report of the Commission on the Revision of the Public Service Commissions Law*,

passage, it still constitutes the most "authoritative" statement of the details of a prudent-investment method of regulation, and it is on this bill that the present analysis is based.

The initial valuation. The inauguration of the prudent-investment program encounters several difficulties. First, the records of most companies do not accurately indicate the actual investment. For property acquired prior to the supervision of accounts, there can be no confidence in the book-investment figures. And even for the recent period when the utilities have kept their accounts according to a prescribed system, there can be no assurance that the investment has not been impaired through inadequate provision for maintenance and depreciation. Secondly, a proper consideration for the legitimate expectations of security holders requires that there be no abrupt change in regulatory methods which would produce an unjustified curtailment in the earning power of the utility. Thirdly, a desire to avoid any constitutional difficulties has caused advocates of prudent investment to recommend that their program be inaugurated with an initial rate base which is consistent with prevailing principles of regulation, thus avoiding any *ex post facto* features. From a consideration of all of these factors, it was provided that the prudent-investment method should be instituted with an initial valuation of each utility's property. These initial valuations should "include all used and useful units of property," and should "give due consideration to every element properly considered under the law of the land, including actual cost of the properties, reproduction cost, general expenditures, depreciation, going value, and any other relevant factor."⁸

Following the determination of the initial rate base, there would be a re-writing of the property accounts of the utility to reflect the commission's final valuation. Thereafter, all determinations of the rate base and of the utility's earnings would be founded on the evidence of the company's capital accounts.

Accounting for capital changes. It is a vital part of the prudent-investment method that the capital accounts record the actual investment in the property used in supplying the public service. All mergers and leases of properties would be sanctioned only on the condition that the property should continue to be recorded at actual cost, less any reserve for accrued depreciation. Upon the retirement or disposition of any unit of property, the appropriate capital account would be credited, the amount of the credit to be the sum at which the unit appeared on the books—the initial valuation in the case of property owned at the time of the initial valuation, the actual original cost for property subsequently acquired, or such sum as should have the approval of the

N.Y., Leg. doc. No. 75 (1930), pp. 241-422. The preparation of the recommendation and bill has been credited to Professor Bonbright, of Columbia, a member of the commission, and to Dr. Bauer, consulting economist to the commission.

⁸ The prescribed procedure would have required each utility to supply a Bureau of Valuation with a complete inventory of its property and to assist in other phases of the work. The findings and all evidence assembled by the Bureau of Valuation were to be presented to the Commission at public hearings, and it was stipulated that the companies, municipalities, and other interested parties might participate in these proceedings and submit any material evidence. The final determination of the initial valuation was the responsibility of the Commission.

commission if neither an initial-valuation figure nor an actual-cost figure had been used for the particular unit of property.

In order to make the control over additions to, and deductions from, the property accounts truly effective, it was specified that the prior approval of the commission should be prerequisite to all except "minor" additions. The bill required that companies adhere to reserve accounting for depreciation on a service-life basis, and the commission was empowered to fix depreciation rates and charges to be observed by companies subject to its jurisdiction.

The rate base. As a fuller description of the workings of the prudent-investment program set forth in the bill will reveal, the determination of a rate base would be a formality not essential to the establishment of the utility's rates and charges. Nevertheless, the bill contained a formal definition of the rate base in terms of the company's capital accounts. The rate base was required to be "an exact sum based upon ascertained facts under the supervision of the Commission, to be maintained as a continuous administrative matter."

The rate base was defined as "the sum of all the balances of the accounts representing property used in service, less the amount of depreciation reserve, and less all other reserves which have been accumulated under the supervision of the Commission for various operating purposes." The balance of any undistributed return and the earnings-equalization reserve (hereafter described) would be excluded from the rate base. To the extent that the depreciation reserve should be inadequate to cover unusual and premature capital retirements, the undepreciated balance in the property accounts would be transferred to a suspense account and amortized out of subsequent earnings.

The fair return and the rate of return. The determination of the fair return would have involved two stages. The bill specifically required that the total return to the company should be based on the determination of separate rates of return on separate increments of investment.

On the entire initial investment, the bill provided that there should be a single reasonable rate of return, to be fixed at the inception of the prudent-investment program and not to be subsequently changed. In the fixing of the rate of return, the commission was instructed to "consider the size and type of the property, the financial standing of the company, the actual costs recently incurred by the company in securing capital, and all other relevant data, taking into consideration the fact that the rate of return on the initial valuation, when once fixed, shall not be subject to later fluctuation."

For subsequent investments, the bill would have required the commission to fix a rate of return on each increment of investment to conform to the actual and reasonable cost of that investment. For bonds and preferred-stock issues, the rate of return was defined as the stipulated interest or dividend payments, with due allowance for the amortization of any discount and premiums. For additional investments financed by common-stock issues, the commission was instructed to fix in advance for each issue the rate of return which should thereafter apply on that increment of investment. In fixing the rate of return on such common-stock investment, the commission was directed to consider the amount of capital actually contributed to the company rather than the par

value or the stated value of the shares issued. Investments made from net earnings available for distribution to the security holders would be classified with common-stock investments, the rate of return to apply to the increment of investment being determined at the time of investment by the commission. Once determined, the rate of return on each increment of investment would not thereafter be changed. The *amount* of the return would, of course, change with additions to, or retirements of, the investment.

To facilitate the administration of the program, the utility companies would be encouraged to undertake a voluntary recapitalization in order to bring the capitalization into conformity with the restatement of accounts and the initial valuation. Where the capital structure of the company should be brought into harmony with the rate base determined by the commission, there was provision for fixing stated dividends on the common stock, that is, the rate of return for the common stock might be fixed in the same manner as applied to the fixing of the return on preferred stocks. Though the commission could not force the companies to submit to a recapitalization, the bill provided that no merger or reorganization should be approved without such a recapitalization as would leave the securities outstanding in harmony with the rate base.

A novel feature of the prudent-investment bill was the provisions governing the accounting for the utility's net income. The entire net earnings of the utility would not become available for the payment of interest and dividends. Only those net earnings which were required to cover the amount of the fair return, as above defined, could be used for the payment of interest and dividends. Any excess of net earnings over the amount of the reserve would be credited to an earnings-equalization, or a "rate-equalization," reserve. And in any year in which the net earnings should be insufficient to meet the requirements of the fair return, the deficit might be charged against any balance in the earnings-equalization reserve. In any year in which the full return could not be obtained from the earnings of the year or from the credit balance of the earnings-equalization reserve, the deficiency could be debited to a suspense account. The right of the utility thus to accumulate deficiencies in return would be limited to three years, but any deficiency in earnings that had accrued within three years might be counted as a part of the fair return for any given year.

The prescription of rates. The proposed legislation provided that the commission should determine annually the "cost of service," and that it should establish rates calculated to produce revenues sufficient to equal that cost. Through the provision for an earnings-equalization reserve, it was not contemplated that annual revisions in rates would be necessary; the bill simply required that the utility's rights with respect to income should be precisely and formally determined each year. The "cost of service" was defined to include four elements: all actual and reasonable operating expenses, including provisions for depreciation and other operating reserves; taxes attributable to the public service; other charges properly incurred in the operation of the utility; and the fair return on the investment. Whenever the equalization reserve should fall to 5 per cent of the rate base, it was provided that the com-

mission should increase the level of the rates and charges, if the increase should be commercially feasible (that is, would produce an increase in net earnings), and that whenever the equalization reserve should rise to 20 per cent, there should be a reduction in rates.

The earnings-equalization reserve. The provision for an earnings-equalization reserve would provide a significant innovation. The bill provided that the earnings-equalization reserve should be accumulated through credits equal to any excess in the utility's income for any year over "the cost of service." The commission was instructed to establish rates initially with the intent of permitting the utility to accumulate over a period of ten years a maximum reserve equal to 20 per cent of the rate base. Charges to the reserve would be permitted only to the extent that the earnings of any year should be insufficient to provide the full return to security holders. The reserve was given a special status as funds "held in trust for the public" that might not be included in the rate base.

Other provisions of the bill. The proposed measure contained detailed instructions with respect to the supervision of the company's accounting for depreciation. The utility would be required to accumulate an ample reserve; but through the requirement that the reserve for depreciation be deducted in the calculation of the rate base, consumers would not be compelled to pay a return both on the original property and on the additional property acquired through the investment of the depreciation funds. On the other hand, the utility company was specifically protected against the deduction from the rate base for any unforeseen depreciation; the undepreciated balance of any units subject to premature retirement would be amortized from subsequent earnings. Other collateral provisions of the bill are not immediately germane to the present discussion.

ADVANTAGES OF THE PRUDENT-INVESTMENT PROGRAM. To what extent does the prudent-investment plan, as advocated and applied, promise the achievement of a sound scheme of control? The most frequently discussed advantages may be briefly assayed.

Theoretical validity. It has been demonstrated that the present-value program rests upon a false analogy between rate regulation and the condemnation of property, and that historically it was the resort to this condemnation fallacy that induced the acceptance of a "value" standard for the testing of confiscatory rates. The prudent-investment theory turns from the assumption that "value" or "property" has been devoted to the public service, and rests upon the principle that it is "capital investment" that has been devoted to the public service; that the "investment" has been by the individuals who have supplied the utility corporation with its capital rather than by the corporation. Secondly, the basic principle is that the public enterprise shall be entitled to charge rates calculated to realize earnings sufficient to cover the cost of rendering the service. The cost standard has been applied to operating expenses and taxes. The prudent-investment method would also apply the cost standard to the payment for the capital invested in the enterprise. Thirdly, the prudent-investment standard proceeds upon the theory that the utility is a going concern, and that this fact is controlling in determining the earnings that the company is to be permitted. And fourthly, the prudent-investment method

regards the utility plant as an organic unity; it makes no attempt to dissolve the plant artificially into its constituent parts in order to find a theoretical "present" cost of conducting the service.⁹

Financial soundness. A second considerable advantage claimed for the prudent-investment method is financial soundness. In particular, the prudent-investment method considers the actual cost of capital to the particular utility; it not only considers the total amount of capital invested in the enterprise, but it also adjusts the return to the particular charges—bond interest, preferred dividends, or common dividends—that are actually paid by the corporation to its various classes of security holders. In placing the determination of the return on a cost basis and considering the actual needs of the utility, the prudent-investment program collects from the consumers only those sums which are essential to the continuance of the utility as a financially successful and serviceable going concern.

Protection of investors' expectations. It is said that the prudent-investment program is better adapted than the present-value standard to assure the protection of the legitimate expectations of the investors. Clearly, so far as the investment consists of bonds and preferred stocks, representing the right to fixed and limited interest and dividend payments, the prudent-investment scheme adjusts the return to the contractual rights of these senior security holders. It seeks to deal similarly with the common stock. It is the contention of the advocates of prudent investment that strict adherence to the tenets of the present-value standard imposes an unnecessarily speculative character on utility investments, and that the adoption of prudent investment would be followed by a reduction in the cost of capital as the expectations of investors were more accurately and consistently met.

Protection of consumers' interests. It is claimed by its advocates that the prudent-investment principle would protect the interests of consumers more adequately than does the present-fair-value method. Since the protection of the consumer is the primary responsibility of regulatory authorities and the fundamental purpose for which regulation was instituted, this contention, if true, constitutes a strong argument for the prudent-investment method. Five circumstances are said to be indicative of the superior protection which is afforded the consumer.

First, the prudent-investment method would have the consumer pay only the actual cost of the service, whereas under the present-value method the charges may not be closely related to the explicit costs which the utility actually incurs.

Secondly, the prudent-investment method is said to be compatible with the interest of the consumer in that it provides for a more prompt and a more accurate adjustment of rates and charges to the changing conditions of cost.

Thirdly, the prudent-investment method operates with a stable rate base. The stability of the rate base limits the fluctuations in the income requirements

⁹ The utility plant is in existence; it represents a large investment; the service is to be performed with that plant; neither the cost of the service to the company, nor the value of the service to the consumers is in the least affected by changes in the present cost of units of equipment similar to those that have been incorporated into the present plant of the going concern. Whitten, "Fair Value for Rate Purposes," 27 *Harv. L. Rev.* 419, 425-426 (1914).

of the company to changes in the current costs of operation. As a result, the utility's charges are subject to less frequent and less extreme variations than would result from adherence to the present-fair-value standard. Reasonable stability in rates and charges allows the consumer to budget more accurately his expenditures for utility service, gives assurance that future rates are not likely to increase radically, serves to encourage increased consumption and especially the adaptation of the utility service to new uses and purposes.

Fourthly, if the prudent-investment method reduces the risks inherent in utility investments, it may be expected that utilities will be in a position to attract adequate capital on more favorable terms.

Fifthly, the consumer may benefit through a reduction in the cost of regulation, for ultimately the consumer bears all such costs.

Administrative simplicity. A most convincing argument is the contention that the prudent-investment method would achieve an administrative simplicity which would make rate regulation truly effective. This advantage would result from the fact that the rights of the utility, its investors, and the consumers would be explicitly formulated: the rights of the investors to interest and dividends, and the right of the utility company to earnings would be judged on the basis of the actual and contractual obligations. The explicit formulation of the respective rights of the utility and its consumers would avoid litigation, speed up regulation, make it less expensive, and at the same time, avoid the diversion of managerial attention to litigious matters.

Encouragement to investment. Two considerations are advanced in support of the conclusion that the prudent-investment policy would encourage capital investment in the utility industry. First, it is argued that the greater financial stability of the utility's earnings under the prudent-investment method would lead investors to place their funds in utility securities on more favorable terms. Secondly, it is said that the prudent-investment principle would encourage the investment of new capital by utility enterprises even during those periods when the price level was high. Since it is in the public interest that utilities should at all times render adequate service and since the rendition of adequate service at all times requires that investment take place in anticipation of the development of a consumer demand, it is important that investments made prudently and in good faith to meet consumer demands should be afforded the protection this principle gives.¹⁰

A practicable standard. When the Supreme Court handed down its decision in *Smyth v. Ames*, it would have been impossible for the courts or other regulatory authorities to have adopted any definite standard with respect to the control of utility rates. Regulation of accounting was nonexistent and there had been little or no control over the securities which railroads and other public utility enterprises had issued. Neither the accounts of the utilities

¹⁰ It has been argued that the present-fair-value method is superior to the prudent-investment method with respect to the timing of investments in utility undertakings, encouraging investments in periods when costs are low and unemployment high. But since accurate anticipation of changing conditions of business activity is not usually possible, it may be noted that this argument for the present-value method is of limited validity. In any case, it should be noted that the present-value method would tend to discourage investment during periods of high cost even though those investments should be needed to supply adequate service.

nor their outstanding capitalizations afforded any reliable index of the investments in the public service undertakings. Consequently, the present-fair-value standard of *Smyth v. Ames* was a compromise that seemed fair to the utility and its investors and to the consumers.

The early obstacles to the adoption of a cost or investment standard of rate control have now been largely removed. With the extensive development of accounting control since 1908 and the more recent enlargement of commission control over security issues, the adoption of the prudent investment program would be quite practicable; the essential data are all available. In recognition of the present practicability of the prudent-investment standard, there are many decisions of the state commissions which indicate their preference for this simpler and more direct rate-making procedure.¹¹ Even in those states where the adoption of the prudent-investment method of rate control is not immediately feasible, there is every reason to believe that the adoption of this standard would lead shortly to the development of the data required to make regulation on this basis truly effective.

THE DISADVANTAGES OR WEAKNESSES OF THE PRUDENT-INVESTMENT METHOD.
Constitutionality. The principal obstacle to the adoption of a prudent-investment program is the uncertainty with respect to its constitutionality. Certain decisions of the Supreme Court rejecting cost figures as a basis for testing whether rates were confiscatory, have been interpreted as creating a barrier to the adoption of this method of control. There is much language in the Supreme Court's decisions which might be cited to support the view that the prudent-investment scheme fails to meet the standards of constitutionality.¹² Whether or not the Supreme Court is committed to one method of determining the rate base for the purpose of testing whether rates are confiscatory, it is said that the Court is committed to the proposition that any system of rate regulation which prevents the utility from earning a fair return on the present value of its property results in a deprivation of property. Unless these constitutional objections to the prudent-investment program can be answered, there is relatively little chance that this method will be adopted.

In support of the constitutionality of the prudent-investment program, many arguments and observations have been marshaled. (1) It is noted that in reviewing the rate orders of commissions the functions of the judiciary, under the constitutional theory of the separation of powers, are limited to deciding the simple question of confiscation; that the regulation of rates has been very generally recognized as a legislative function by the Supreme Court; that the legislature, or its agent the commission, is presumably free to adopt whatever procedure is suitable for the determination of reasonable rates; and that the courts in the proper exercise of their own limited function may suitably adopt their own procedures without thereby imposing the same pro-

¹¹ Following the decision in the Supreme Court in *Railroad Comm. v. Pacific Gas & Electric Co.*, 302 U.S. 388, (1938), *The Wall Street Journal* reported in its issue of December 28, 1937, that a survey of the views of the various state regulatory commissions revealed a large preference in favor of the prudent-investment method of rate making.

¹² See *San Diego Land & Town Co. v. Jasper*, 189 U.S. 439, 442 (1903), and *The Minnesota Rate Cases*, 230 U.S. 352, 454 (1913). Also, *St. Louis & O'Fallon Ry. Co. v. U.S.*, 279 U.S. 461, 487 (1929).

cedures on the legislative bodies. Though the language of the Court has sometimes suggested a failure to heed the distinction between the questions raised before the judiciary in testing whether rates are confiscatory and the questions properly presented to the commission in determining whether rates are reasonable, there is ample evidence that the Supreme Court has generally recognized the appropriate limit to the judicial function.¹³ If this is a correct interpretation of the attitude of the Supreme Court and if this is a proper understanding of the respective functions of these two branches of the government, there should be no constitutional objection to the adoption of the prudent-investment program.

Before leaving this question, however, it may be noted parenthetically that the Supreme Court has taken a position in upholding a federal excess-profits tax which might well be cited in support of the prudent-investment principle, despite the fact that the decision was handed down in 1921. Congress had provided for the deduction of a certain percentage on the "invested capital" before computing the excess profits tax; "invested capital" was defined as the actual cash paid in, plus the paid in or earned surplus and undivided profits employed in the business. In *LaBelle Iron Works v. United States*, the Court remarked that it was appropriate "to adopt tests that would enable returns to be more easily checked by examination of records, and make them less liable to inflation than if the more liberal meaning of 'capital and surplus' had been adopted";¹⁴ and the Court continued:

"There is a logical incongruity in entering upon the books of a corporation as the capital value of property acquired for permanent employment in its business and still retained for that purpose, a sum corresponding not to its cost but to what probably might be realized by sale in the market. It is not merely that the market value has not been realized or tested by sale made, but that sale cannot be made without abandoning the very purpose for which the property is held, involving a withdrawal from business so far as that particular property is concerned. Whether in a given case property should be carried in the capital account at market value rather than at cost, may be a matter of judgment, depending upon special circumstances and the local law. But certainly Congress, in seeking a general rule, reasonably might adopt the cost basis, resting upon experience, rather than anticipation."¹⁵ What Congress might enact as a base for corporate taxation is suggestive of what Congress and the state legislature should be permitted to enact with respect to the establishment of utility charges.

(2) In the regulation of utility rates, the legislature has more extensive powers than those that have been conferred upon the public service commission. The adoption of the prudent-investment method of rate control by the commission, with the possibility that a commission composed of other individuals might later abandon this standard, would raise quite different constitutional questions from those that would be presented if the legislature

¹³ This question has been considered at length in Chapter XI, "The Present-Fair-Value Concept of the Courts." See also Barnes, "Federal Court and State Regulation of Utility Rates," 43 *Yale Law Journ.* 417, 443 (Jan., 1934).

¹⁴ 256 U.S. 377, 390, 391-392 (1921).

¹⁵ *Ibid.*, 393-394.

itself should adopt the prudent-investment standard as controlling for its commission. The adoption of a statutory rate base, prudent investment or otherwise, would change the nature of the property right of utility investors, and might be said to render the earlier decisions of the Supreme Court inapplicable. Certainly with respect to future investments in utility enterprises, the presence of a statutory standard would be ample warning to investors as to the basis upon which the earnings of their company would be adjusted. With respect to past investments, a somewhat different constitutional question would be presented. But if the prudent-investment method began with an initial rate base which made allowance for "all the elements of value recognized by the law of the land"—that is, if the initial rate base should be determined according to the present-value standard—there could be no confiscation of the investors' property.

(3) Whether the prudent-investment method of control can be regarded as unconstitutional depends upon the Court's view as to when the property is "taken." Investors in public utility enterprises know that such companies are subject to regulation. It may, therefore, be argued that they make their investments with the understanding that regulation is both proper and probable. Furthermore, it may be said that the investor has acquiesced in the state's right to restrict the earnings of the property to a fair return on the actual investment therein or on any other reasonable base the legislature may adopt.

(4) In support of the prudent-investment program, it has been urged that this scheme of regulation is concerned with the protection of the real owners of the utility property, the investors, rather than with the protection of the abstract rights of that artificial entity, the corporation, in whose name the public utility property is held. It is even said that the prudent-investment program of regulation affords the investor a protection superior to that which he receives under the present-value method. If this contention is true and if the court can be persuaded to accept it, then it would logically follow that if the prudent-investment program does not result in the confiscation of the property of the individual investors, there can be no finding that the property of the corporation itself is being confiscated.

(5) The historical development of public utility regulation is not without its significance for the question of constitutionality. The circumstances which first persuaded the court to reject the original cost or investment basis as the measure of the utility's right to earnings have already been canvassed.¹⁹ Since those practical difficulties have now largely disappeared, there is no reason why the Supreme Court should not reconsider whether the constitutional guarantees with respect to property are not duly protected by the adoption of the prudent-investment program.

(6) A most convincing argument in support of the constitutionality of the prudent-investment program is to be found in the decisions of the Supreme Court upholding rate orders of the California Commission which have applied the prudent-investment standard. In the *Los Angeles Gas & Electric Corporation* case, the Commission had based its finding of the rate base upon a valuation made in 1917, and brought up to date through accounting control;

¹⁹ Chapter XI.

the Court was willing to accept the rates established on this standard, despite the objections of the company.¹⁷ And in 1938, in *Railroad Commission v. Pacific Gas & Electric Company*, the Court upheld the California Commission over the dissent of Justices Butler and McReynolds, the contention being that the Commission had fixed the rate base giving effect solely to the historical costs of the property. While recognizing that the Commission had used the historical-cost rate base, the Court refused to hold "that the Commission in taking historical cost as the rate basis was making a finding without evidence and therefore arbitrary."¹⁸

While these decisions of the Supreme Court do not indicate that the Supreme Court will accept the rates established through the application of the prudent-investment method regardless of the circumstances of the particular case, they do clearly indicate that the prudent-investment method, *per se*, is not an unconstitutional procedure. It would appear that commissions are free to adopt, and that legislatures are free to enact, laws providing for the use of the prudent-investment standard.

Of course, there would still remain the possibility that the company might challenge the rates as confiscatory, if, under particular circumstances, they failed to yield a return upon the fair value of the property. Where it is presented with an actual factual record of the original cost of the property, however, it is unlikely that the Court would be inclined to set aside rates established on this factual basis, in favor of permitting the utility to earn a return on a higher present-value, or reproduction-cost, base.¹⁹

Objections to the connotations of "prudent." The term "prudent" has been prefixed to "investment" to indicate that the rate base should not include expenditures which are obviously unreasonable, extravagant, or fraudulent. The presence of the word "prudent" in the formula has been seized upon by critics, who have protested that to set up such a standard for the rate base injects an arbitrary element that adds to the risks of, and works unfairness to, utility investors. Such is clearly not the purpose of the advocates of prudent investment. Judgment with respect to the prudence or imprudence of any investment would rest upon the circumstances and conditions prevailing when the investment was made rather than on the hindsight that might be applied when the utility should be subject to rate regulation. In the more progressive states, where the commission has control over security issues and where utili-

¹⁷ It may be noted that the general level of prices in 1933 was such that the prudent-investment rate base was probably in excess of the rate base that would have been found on the basis of present fair value. It may also be noted that in this case the Court refused to commit itself formally to an actual cost standard. (289 U.S. 287, 306 [1933].)

¹⁸ 302 U.S. 388, 393-394, 399 (1938).

¹⁹ Those who concentrate their attention on the judicial process, and on the decisions rather than on the verbal precedents which the Court has established in earlier cases, are inclined to stress that the Constitution means what the Court interprets it to mean. The critical question with respect to the constitutionality of any method of rate control thus depends upon the contemporary personnel of the Court. In their role as prophets, such commentators are inclined to take the position that the present membership of the Supreme Court is more acutely aware of the fallacies and inadequacies of the present-value method than has been true of earlier courts and less sympathetic with judicial intervention in the administrative process; and that there is, therefore, a reasonable expectation that the Court will be more inclined to look at the Constitution and the realities of the problems of rate control, rather than to concentrate their attention on the "gloss" to the Constitution which earlier precedents have developed.

ties are required to obtain a certificate of convenience and necessity for all major extensions and additions, there is little likelihood that a utility would ever find its investment base reduced on the score that any of its investments were not "prudent."

Possible difficulties in the attraction of capital. Doubts with respect to the ability of the prudent-investment program to insure an adequate supply of capital center chiefly on the character of the common-stock investment. In appraising this criticism, attention will be concentrated on the program as outlined in the New York bill; this limitation of the analysis is necessary because other proposals regarding prudent investment have not been sufficiently explicit as to precise status of the common stock. It has been previously noted that the rate of return for any increment of investment remains unchanged despite changing economic conditions. Even with respect to common stock, the commission would be instructed to fix in advance of its issue the rate of return which should thereafter apply to that increment of the investment. There would appear to be two procedures which might be followed to implement this policy: (1) the commission might fix a uniform rate of return for all of the common stock issued, and permit the price of any issue to be adjusted according to the current cost of capital when the issue is sold; or (2) the common stock might be issued in series, with each series bearing a dividend rate fixed according to the prevailing cost of capital when each issue was first offered to the investing public. The validity of the criticism is not dependent upon which of these two procedures is followed. What the prudent-investment program proposes to do is, in effect, to pay the common stockholder the minimum that is necessary to elicit his investment at the time the investment is made, although he will never be permitted to earn more on that common-stock investment whatever the future developments may be and though he may actually receive less. With the offer of a fixed maximum return and a possibility of receiving less, it is unlikely that investments in utility common stocks would continue to be regarded favorably by investors; and it may be doubted that the establishment of an earnings-equalization reserve, together with the right to make up any deficiency in earnings sustained during the three previous years out of such excess earnings as might be available in the current year, would offset the deterioration in the common stockholder's position that would follow from the limitation of his return to a fixed dollar sum, regardless of changes in general economic conditions, the level of prices, or the conditions of the investment market.

It should not be assumed that the ability of the corporation to sell common stock would be a matter of no importance to the success of the prudent-investment program. It would still be in the public interest that utilities should raise a large proportion of their capital through the sale of common stocks. Should it be unable to finance its capital requirement through common-stock issues, the utility would be unable advantageously to resort to the issuance of bonds and preferred stocks, for the possibility of selling bonds and preferred stock at low yields is dependent upon a common-stock investment which provides a cushion of assets and a cushion of earning power for the senior securities. An inability to sell common stock would certainly result in an increase in the

cost of capital to a utility. And if financing through bonds to the extent that would create a top-heavy capital structure should be necessary, the financial future of the utility would be jeopardized by fixed charges out of proportion to its earnings. The investment standing of utility common stock cannot be a matter of indifference to the regulatory authority and the consumers.

This criticism of the prudent-investment method is at once the most serious and the most convincing. It does seem likely that utility companies would experience difficulty in raising capital through the issuance of common stock, if the common stockholder were told in advance that his earnings would be fixed irrespective of what changes might occur in the general economic situation or in the investment market. In reply to this criticism, it is stated that at the time of an issue the commission is free to establish any dividend rate on the common stock that is necessary in order to assure its sale. But in order to assure the sale of the common stock, it would probably be necessary to establish a dividend rate high enough to insure the investor that his fixed dollar dividend would remain an attractive return, whatever might happen to general investment conditions; and to fix such a return on the common stock would unnecessarily increase the cost of capital to the company.

Incentives to efficiency. The prudent-investment proposals have also been criticized on the score that the incentives to managerial efficiency which exist under the present-value method would be destroyed. This would result because the corporation would have no right to any of the income earned in excess of that required to meet operating expenses, taxes, depreciation, and the contractual returns on bonds and preferred stocks, plus the common dividends stipulated by the commission at the time the common stock was sold. Any excess earnings would be credited to the earnings-equalization reserve to be used only to make good any deficiency in return which the utility might experience.

APPLICATIONS OF THE PRUDENT-INVESTMENT PRINCIPLE. Although a large proportion of commissions have expressed their preference for the prudent-investment method of rate control, there has been no long experience with the application of prudent-investment principles to all phases of rate control. The states of California and Massachusetts have often been cited as having commissions that follow the prudent-investment procedure. Certain features of the Federal Water Power Act also coincide with the essentials of the prudent-investment theory.

California. Throughout its history, the California Railroad Commission has accepted the prudent investment as the preferable basis for the determination of the utility's right to earnings. The accounting records of the California companies have not, in every instance, been adequate to supply the Commission with satisfactory evidence of the actual cost of the properties. In consequence, the Commission has sometimes found it necessary to weigh testimony with respect to the valuation of the property and to consider outstanding securities and other evidence that are normally a part of a present-fair-value determination. Even when the facts of the case have compelled the Commission to resort to the valuation procedure, the objective has been a prudent-investment figure, and where the prudent investment was not ascer-

tainable from the books of the company, the Commission has sought to estimate the reasonable historical cost.²⁰ The preference for prudent investment or reasonable historical cost, instead of present fair value or reproduction cost, was maintained even when the rising costs resulted in increasing utility pressure for the present-value base.²¹ The Commission also adhered to reasonable historical cost when changing conditions brought the reproduction costs below the historical costs.²²

For the most part, the California Commission has treated the various "elements of value" in harmony with the prudent-investment principle. Thus the rate base has commonly been determined without the deduction of accrued depreciation.²³ Similarly, no allowance for going-concern value has been made where the earnings of the utility have been sufficient to wipe out any early deficits.²⁴

It should be noted that the Commission has not been willing to allow the utilities to earn a return on cost regardless of the reasonableness of the investment. Where the utilities' costs have been excessive, the Commission has pointed out the unfairness of expecting the consumer to bear the burden of the unnecessary cost.²⁵

In the determination of the rate base, the one aspect of the California Commission's procedure which has not been consistent with the prudent-investment principle has been the treatment of the land values. Following the precedent of the Supreme Court in *The Minnesota Rate Cases*, the Commission has included lands at their present market value. A similar standard has been applied in the valuation of water rights.²⁶

In summary, the California Railroad Commission has taken as the rate base the actual prudent investment in the utility's property other than land, the latter being included at its present value.²⁷ In the pursuit of this method the California Commission has had the support of the state court.²⁸ And it is highly significant that the California Commission's adherence to the prudent-investment or historical-cost rate base has not resulted in the reversal of its decisions for that reason when appeals have been taken to the Supreme Court of the United States.²⁹

The California Commission has failed to adhere to the prudent-investment principle in determining the rate of return. First, the Commission has not based its determination of the rate of return on the actual cost of capital to the

²⁰ *Re Pacific Gas & Electric Co.*, 22 C.R.C. 744 (1922). See also *Pomona Valley Tel. & Tel. Union*, 30 C.R.C. 606 (1927); *Re Imperial Utilities Corp.*, 31 C.R.C. 539 (1928); *Re Foothill Ditch Co.*, 32 C.R.C. 44 (1928); *Los Angeles Railway Corp.*, 31 C.R.C. 383 (1928).

²¹ *Joint Application of the Southern Sierras Power Co. and Holton Power Co.*, 18 C.R.C. 818, 832 (1920).

²² *Re Southern California Telephone Co.*, 33 C.R.C. 812, 814 (1929).

²³ *Los Angeles G. & E. Corp. v. Comm.*, 289 U.S. 287, 310-311 (1933).

²⁴ *Re San Joaquin Light & Power Corp.*, 9 C.R.C. 543, 583 (1916).

²⁵ *Application of the City of San Diego*, 4 C.R.C. 902, 923 (1914); *The Eastside Canal & Irrigation Co.*, 4 C.R.C. 597, 604 (1914).

²⁶ Pegrum, *Rate Theories and the California Railroad Commission*, p. 31.

²⁷ *Re Los Angeles G. & E. Corp.*, P.U.R. 1931A, 132, 137 (Cal., 1930).

²⁸ *San Diego Water Co. v. San Diego*, 118 Cal. 556 (1897). See also *San Joaquin Light & Power Corp. v. Railroad Comm.*, 175 Cal. 74 (1917).

²⁹ *Los Angeles G. & E. Corp. v. Comm.*, 289 U.S. 287 (1933); *Railroad Comm. v. Pacific Gas & Electric Co.*, 302 U.S. 388 (1938).

utility. Not only has it not considered the cost of different increments of capital to the utility, but it has not even sought to determine the overall costs. Instead, it has sought that rate of return which would deal fairly with the utility company in the light of earnings on similar investments, and it has been aware of the need of attracting capital to California.³⁰ Secondly, the Commission has regularly designated a blanket rate of return, rather than a composite rate of return with particular reference to bond interest, preferred dividends, and the required earnings for the equity stock. However, in the establishment of this blanket return, the California Commission has given consideration to the financial structure of the company.³¹ Thirdly, like other commissions, the California Commission has tended to rely upon precedent in reaching its conclusions with respect to the appropriate rate of return.³²

The Federal Water Power Act. The Federal Water Power Act of 1920 incorporated certain provisions with respect to the supervision of licensees developing hydroelectric projects subject to federal jurisdiction, provisions which embodied the essentials of the prudent-investment principle.³³

2. A REPRODUCTION-COST RATE BASE

In the preceding discussion, attention has repeatedly been given to reproduction cost, as evidence of "value," as a "measure" of present fair value, and as an element in the final synthesis to determine the present-fair-value rate base. In none of these discussions was it assumed that the reproduction cost should itself serve as the rate base for the purpose of establishing reasonable rates and charges. There are, however, those who advocate reproduction cost on its own merits as the appropriate rate base for the establishment of utility charges.³⁴ The arguments advanced for the reproduction-cost rate base can be summarized with respect to four basic contentions: that the reproduction-cost rate base results in the establishment of charges that approximate competitive prices, that the reproduction-cost method adjusts utility rates to changing conditions of cost, that the use of the reproduction-cost rate base provides equality of treatment for both regulated and unregulated industries, and that the reproduction-cost rate base provides investors with a return on the purchasing power which they have contributed. The substance and validity of each of these arguments requires consideration.

AN APPROXIMATION TO COMPETITIVE PRICES. In seeking to establish reasonable rates, regulation requires a standard or norm, and the most satisfactory standard is said to be that provided by the competitive price system. Thus, the purpose of regulation should be to establish those charges that would prevail if free competition were practicable for the regulated industry. Under conditions of competition it is assumed that prices tend to be adjusted to re-

³⁰ *Palo Alto v. Palo Alto Gas Co.*, 2 C.R.C. 300, 317 (1913).

³¹ *Antioch v. Pacific Gas & Electric Co.*, 5 C.R.C. 19 (1914).

³² Pegrum, *op. cit.*, Chapter III.

³³ Chapter XXII, Sec. 3.

³⁴ Dorey, "The Function of Reproduction Cost in Public Utility Valuation and Rate Making," 37 *Harv. L. Rev.*, 173-200 (Dec., 1923); Brown, "Railroad Valuation and Rate Regulation," 33 *Jour. Pol. Econ.* 505-530 (Oct., 1925); Brown, "Economic Bases and Limits of Public Utility Regulations," 53 *Am. B. A. R.* 717-737 (1928).

flect the current cost of producing the product or the service, and that in order to apply the same standard to the regulation of utility rates it is necessary to determine the current costs, operating and capital, that would be encountered if a new utility should be established to supply the service.

The argument for competitive rates is concerned not only with the effect of rates upon the utility itself, but also with the effect of those rates on the rest of the economy. If the utility industry fails to charge competitive rates adjusted to current cost, then it is said that economic maladjustments will arise with respect to the location of industry, with respect to the allocation of capital investments (both for the utility industry and for other industries) and with respect to consumption.

The argument has been illustrated with reference to a region which has been served by one railroad built during a period of low prices and charging rates adjusted to the original cost of providing the capital facilities. If during a subsequent period of high prices it becomes necessary to construct a second railroad in order to handle all of the traffic within the territory, and if these two railroads are competing, it would be a highly arbitrary and impractical regulatory policy which would attempt to enforce different rates with respect to these two railroads. The only practical procedure would be to charge uniform prices irrespective of which railroad supplied a service. The reasonableness of this rate policy is apparent after the competing railroad has been constructed, but the same principle should govern the rates charged by the first railroad before the second railroad is constructed. If the first railroad should be restricted in its rates and charges so as to yield a return only upon the original cost of the property, that railroad would lack the investment resources to enlarge its own plant in order to care for the increasing demands for transportation service, and there would be no inducement for the construction of a second railroad. Thus it is argued that in order to assure adequate service it is essential that rates be based at all times upon the current cost of supplying that service. If a falling price level is assumed, a similar argument is advanced. It is contended that established utilities should be obligated at all times to supply service as cheaply as could a new firm just entering the field; this price policy, it is said, the consumer has the right to demand.

The validity of competitive standards for the purpose of regulating rates in an industry which is not characterized by competition has been seriously questioned. Most utility companies are operating under franchises which protect them from the direct competition of a competing service, and there is no reason why their position of relatively greater security should not be reflected in both a lower return on their invested capital and lower charges to the consumer.

If the competitive-price argument could have any validity, then the reproduction cost sought would have to be the cost of reproducing the service, that is, the cost of supplying the service with a modern substitute plant. But, as a practical matter, the use of the reproduction cost of the substitute plant raises serious difficulties: it opens a whole new range of controversy as to the specifications of the substitute plant; it involves a considerable amount of speculation with respect to the cost of building a purely hypothetical plant;

and when obtained, the result has no rational relation to the actual cost to the utility of operating with its existing plant and equipment.

The most that can be claimed with respect to the competitive standard is that utility earnings should be sufficient to enable the company to purchase supplies, hire labor, and raise capital in competitive markets. As to the fair return on the company's property, only the adequacy of the earnings to attract capital is pertinent. Even granting that the utility should be allowed to earn a competitive return in order to be assured of attracting capital in competition with other similarly situated industries, it does not follow that the competitive return is to be yielded through the charging of competitive prices.

AN ADJUSTMENT OF RATES TO CHANGING CONDITIONS OF COST. In support of the adoption of the reproduction-cost rate base, it is also said that a revaluation according to the current cost of providing the property will result in charging rates which reflect current cost of production. The desirability of adjusting rates to current cost of production is urged not only in order that the investor and consumer may be protected against changes in the real costs of the utility service, and that the prices charged by the company may approximate what are thought to be competitive prices; the argument also rests on the assertion that only by adjusting rates to the current cost of supplying the service can there be assurance that the location of industry, the direction taken by the investment of capital funds, and the relative quantities of service consumed, will conform to sound economic principles. This statement requires dissection.

If it be assumed that a period of rising prices follows the construction of the utility plant, the consequences of charging rates based upon the actual cost of construction may be considered. Under these circumstances, utility rates would be lower than the prices of other commodities and services involving similar real costs. The utility service would seem to be cheaper in relation to other goods and services, and consumers would be encouraged to expand their use of the service. The result would be a diversion of consumer demand from other expenditures to the detriment of other industries supplying the consumer; in effect, the low price of utility service would be a discrimination against those other industries which are competing for the consumer's dollar. Furthermore, if utility charges are held to an uneconomically low level, the inadequacy of the utility's income would tend to discourage the investment of capital, for capital would be hesitant where earnings are lower than those currently being realized by other businesses affected with corresponding risks. The inability of the utility to raise capital for purposes of expansion would coincide with an artificially high demand for its service; despite the enlarged demand, the company would presumably be unable to undertake the necessary capital investments. In order that they may keep pace with the capital expansion of other industries, it is necessary that the utility companies at all times be allowed to earn a return commensurate with the earnings in other businesses.³⁵

These arguments require appraisal. First, it may be noted that the practical effect of adjusting the rate base to changing conditions of cost is not so great

³⁵ The argument in reverse for falling prices can readily be constructed.

as this theory would seem to assume. For most utilities, considerably more than half of their costs are operating costs, including taxes and depreciation, and rate adjustments with respect thereto are independent of the rate base. Secondly, it may be noted that in a period of rising prices the utility has no need for such additional revenue as would be provided by an upward adjustment in its rate base. Thirdly, the pursuit of this policy during a period of falling prices might deprive the utility of income essential to the continuance of satisfactory service. Finally, the shrinking income available for the common stockholder and the decreasing margin of earnings protection available to the preferred stocks and bonds during an era of declining prices would have an adverse effect upon the investment standing of the utility's securities and might lead to an increase in the cost of capital.

EQUALITY OF TREATMENT FOR REGULATED AND UNREGULATED PROPERTIES. It is assumed that there should be equality of treatment for both regulated and unregulated industries, and that this equality of treatment is to be obtained by assuring that the purchasing power of the income available to investors in regulated enterprises shall keep pace with changes in the purchasing power of the dollar. Considerations of justice and equity for the investor are said to demand this adjustment. But it is also argued that this policy is necessary to prevent a diversion of capital to unregulated fields and a shortage of capital in the regulated enterprises. And if equity to the investor demands these changes in the rate base and in rates during a period of rising prices, it is said that during a period of falling prices there should be no preference given to those who have invested their funds in regulated enterprises.

In weighing this argument, it may be noted that if preferential treatment should be given to investors in utility enterprises, such treatment might be justified as a policy redounding to the advantage of the consumer through reducing the cost of capital. As a practical matter, it should be noted that there is no equality of treatment for investors in unregulated businesses; some prosper mightily and others lose all they have invested. Thus, there arises the practical question as to what group of investors and what unregulated enterprises should constitute the standard for judging the fairness of the treatment accorded to the investors in the regulated industries. Furthermore, an upward and downward adjustment of the rate base does not secure equality of treatment as between different classes of security holders. The large proportion of senior securities typical of most utility capital structures results in concentrating both the benefits and the detriments arising from such changes in utility income upon the common stock. For this program to function, it would be necessary for all securities to partake of the nature of common stocks in having no contractual right to a fixed monetary income.

A RETURN ON THE PURCHASING POWER CONTRIBUTED BY THE INVESTOR. It is urged that the investor is entitled to a return on his investment which is stable in terms of purchasing power, and that the dollar return should expand and contract with the changes in the level of prices. This argument appears to be no more weighty than those that have been considered above. Both the capital structure of utility companies and the nature of the reproduction cost of their properties would prevent any stabilization of the purchasing power of

utility investors through adherence to a rate base determined according to the reproduction costs of the utility's property.

THE DISADVANTAGES OF THE REPRODUCTION-COST BASE. In summary, it may be noted that not only do the arguments for the adoption of the reproduction-cost rate base lack persuasiveness, but that there are certain positive considerations opposing the adoption of this procedure. It would greatly complicate the administrative work of regulating rates; it would necessitate expensive valuations and revaluations; it would cause litigation and delays; and it would probably produce much ill-will between utilities and the consuming public. Inasmuch as the utility is required to supply service at all times, and since it may not always choose the time to make its capital investments but may be compelled to make investments during periods of high prices, it would be most unfair if the company should thereafter be prevented from earning a return on such investments. Adherence to the reproduction-cost base might throw many relatively efficient companies into receivership during prolonged and radical price declines, for their costs cannot be reduced in proportion to recessions in the price level. The inability of a utility to meet its fixed charges would have serious consequences, not only for its investors, but for consumers as well. Since fluctuations in reproduction cost are not related to the real fluctuations in the costs of utility service, such changes as would thereby be induced in the total earnings and net earnings of the utility could not be otherwise than detrimental to the efficient and economical rendition of utility services. The reproduction-cost base is not the solution to the problems of utility rate regulation.

3. THE WASHINGTON PLAN

The ideal of utility rate regulation has always been a plan that would operate promptly and automatically and with fairness to investors and consumers. The service-at-cost franchises or sliding-scale plans represent a development in this direction. Of these plans, the most widely publicized in this country has been the Washington plan, under which the Potomac Electric Power Company has operated since 1924. The essential features of this plan have been presented as part of the treatment of utility franchises.³⁶

Unless the service-at-cost principle can be made compulsory with respect to utility companies, it offers little prospect of a complete and satisfactory solution to the problems of utility regulation. Since these programs involve a more rigid control of utility earnings than that effected by the more conventional methods, prosperous utilities are reluctant to enter into these contractual arrangements. The plan appeals chiefly to utilities that have encountered difficulty in earning an adequate return on their investment, and in these instances the public is something less than eager for a plan which seems to guarantee a return upon what may appear to be an excessive investment judged by the prevailing demand for the service.

³⁶ See Chapter VII.

4. THE INCREMENT-COST SCHOOL

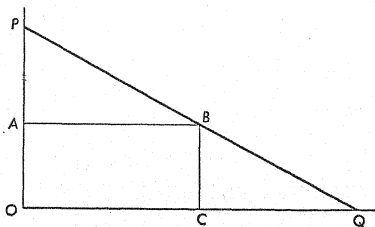
THE PLAN. One of the most sweeping proposals for the reform of utility rate regulation is that advanced by the increment-cost school. This program would provide for the establishment of utility rates at the marginal cost of providing the service. The marginal cost is the addition or increment cost that could be avoided if that unit of service were not supplied. Where there are large overhead costs, the marginal costs are much lower than the average cost per unit of service. According to this theory, the prices at which products are sold should not be weighted for the purpose of producing the revenue required to pay interest on the investment and other items of overhead cost. All overhead costs would be paid through government subsidies or perhaps through an unavoidable tax on all of those using the utility service. Preferably, the funds would be supplied by taxes levied on incomes, inheritances, and land values.³⁷

THE MERITS OF THE PLAN. The chief advantage claimed for the plan is that this price policy would encourage increased consumption of the utility's service so long as consumers were willing to pay a price equal to the increment cost of producing the service. Under conventional methods of pricing to cover average total costs, the high price chokes off the demand for the service even though the value of the service to the prospective consumer is materially in excess of the actual out-of-pocket costs of supplying that service. Selling at marginal costs would serve to maximize the general welfare derived from the service.³⁸ It is maintained that the revenue received from the sale of a service or product does not measure the social benefit (the area under the PQ curve) that should be set off against the social cost, and that the true social benefit may be considerably in excess of the price that consumers have to pay for the

³⁷ A mathematical presentation of this plan has recently come from Prof. Harold Hotelling, "The General Welfare in Relation to Problems of Taxation and of Railway and Utility Rates," 6 *Econometrica* 242 (1938). The theoretical foundations were also developed by A. P. Lerner, "Statics and Dynamics in Socialist Economics," 48 *Econ. Jour.* 253 (1937). See also Durbin, "Economic Calculus in a Planned Economy," *Econ. Jour.*, 46: 676 (1936); Montgomery, "Government Ownership and Operation of Railroads," *Annals Am. Academy of Pol. and Soc. Sci.*, 201: 137 (1938); Clemens, "Price Discrimination in Decreasing Cost Industries," *Am. Econ. Rev.*, 31: 794 (1941).

This theory of taxation and prices is not new; it has been traced back to Jules Dupuit and various aspects of it are to be found in the writings of Jevons, Fisher, Colson, Marshall, and Taussig.

³⁸ This situation may be illustrated by reference to the accompanying diagram. The total capacity of the plant is indicated by OQ ; the prices which various consumers would be willing to pay for



service. The advocates of this policy measure the social benefits as the sum of the differences between the prices which consumers would be willing to pay rather than go without the service, and the prices which they do in fact pay; this quantum is commonly referred to as the consumer's surplus. The adoption of this price plan would, it is argued, serve to maximize the general welfare by creating the largest possible aggregate of consumers' surpluses.

The other advantages claimed for the program of increment pricing follow from what has just been described. (1) Increment pricing would lead to the full utilization of existing plant capacity and thereby avoid the economic wastes that are represented by present capacity unused. (2) The plan would serve to encourage investment, since it would lead to an enlarged consumer demand. This increased investment would help to eliminate another source of economic waste, namely, the idle capacity of the capital-goods industries. (3) The overhead cost of supplying the service would be taken care of through government subsidies, with the revenues preferably collected through taxes on incomes, inheritances, and land values—taxes which would not result in any lessening of production or investment. (4) The adoption of the increment-price plan would promote economic stability and fuller employment, since the adoption of the plan would result in a net increase in the consuming power of individuals. The attempt to pay overhead costs out of the revenue derived from the sale price of the product contributes to economic instability through keeping unit cost high and limiting output. (5) A purely practical merit of the plan would be the great simplification in rate structures which would follow the adoption of increment costs as the basic rate.

It may be noted that the advocates of the increment-cost plan of pricing would not say that prices should never be in excess of increment cost. The justification for prices in excess of increment cost would be found in a situation where the total demand for the product at a price equal to the increment cost would be in excess of the available supply. In this situation the higher price would serve to ration the limited quantum of service among those whose desires or whose purchasing power made them willing to pay the higher rate.

A CRITICAL APPRAISAL OF THE PLAN. Critics of the plan admit that it would lead to the fuller utilization of the existing capacity, both for the utility's plant and for those industries that are occupied with the production of the capital equipment for utility companies.³⁰

successive increments of the service are indicated by the ordinates along the line PQ ; and the total satisfaction which consumers derive from this service would be the sum of the ordinates, or the area OPQ below the line PQ . If the price is set at OA , then consumers will purchase OC units and they will pay $OABC$. The value of this service to the consumers is the total area under the PB part of the PQ curve, or $OPBC$. Under these circumstances there is a "consumers' surplus," indicated by the rectangular area APB . By setting the price at OA , the plant operates at less than full capacity, for it could produce OQ units. Thus the area CBQ represents the loss of consumer satisfaction or general welfare that results from charging this price OA for the service. If the price OA is reduced, a larger volume of service will be taken, and the total welfare will be correspondingly increased. According to this diagram, the welfare would be maximized if the service were free and OQ units were taken. Such a situation might apply, for example, to a toll bridge.

³⁰ It is, of course, conceivable that there could be such distortion in the investment in utility properties that no price which would cover the additional out-of-pocket or increment cost would suffice to assure the full utilization of the existing plant capacity. However, even though full utilization should not be achieved, the increment price plan would bring the service within the reach of a larger number of consumers through its lowering of rates.

The recommendation of the plan rests rather heavily upon the assumption that the general welfare which is to be balanced against the total economic cost of supplying the service is to be measured by the amount which consumers are willing and able to pay. It should be noted that what consumers are willing and able to pay depends upon the amount and distribution of income and that it is doubtful whether the existing distribution of income may be assumed to maximize the general welfare. Also, the assumptions respecting the consumer's surplus may be questioned. The response of the consumer to particular prices is purely hypothetical; if the consumer buys three units at \$1.00 each, the most that can be said is that he would presumably have bought fewer at a higher price and more at a lower price; the precise quantities at particular prices, other than the market price, are indeterminate and purely speculative. But if the consumer be assumed to buy one unit at \$5.00, and two at \$3.00, and three at \$1.00, may he be said to derive \$9.00 of satisfaction from the purchase of three units at \$1.00 each? The concept is a dubious one.

A more practical objection to the plan has to do with the difficulty of assuring efficiency where the management knows that all overhead costs will be covered through a government subsidy. Before the plan could be adopted, it would be necessary to develop some device other than financial loss to detect and penalize inefficiency in operation. Also the earnings on utility properties would cease to guide the investment of capital. What would prevent an uneconomic expansion of the utility industries at the expense of other outlets for investment funds?

To some the plan would appear objectionable in that it requires the government to collect through taxes an increasing proportion of the national income and to direct its expenditures into all the various channels required to supply the community with such goods and services as should be sold on the increment-cost plan. There is no reason why the plan should stop with utility rates.

The merits of increment-cost pricing—in stimulating increased consumption and achieving full utilization of productive capacity—are not to be dismissed by either theoretical or practical objections. It may be noted, however, that the essence of the increment-cost plan is attained where the rate structure conforms to the best modern standards. The demand and customer charges, if accurately calculated, can constitute an "unavoidable tax" (equivalent to the utility's overhead costs) on all who take the service; and the energy or output charge should conform to the "increment costs" of supplying the service. Only to the extent that utility price structures do not conform to the best pricing principles does the increment-cost proposal possess significant advantages not realized under current practices.

5. MAXIMUM PROFITS FOR THE UTILITY

A LAISSEZ-FAIRE POLICY. There are those who believe that the public interest in cheap and abundant utility service can be most effectively satisfied through an abandonment of any attempt to limit the profit of utility companies. They deny that the reasonableness of utility rates has any relation to the rate base, whether present fair value or prudent investment or something else, and they

assert that the initiative with respect to rate policy should be left to the utility management. This policy rests on the basic assumption that there is substantial identity of interest between the consumers and the company.⁴⁰

In the absence of public regulation seeking to limit the maximum profits which companies may earn, the management would naturally seek to establish those rates which would enable the utility to earn the maximum net profit. The conviction that maximizing profits for the company would be in the public interest rests upon certain assumptions with respect to the nature of the demand for the utility's service. The advocates of this policy point out that utilities are monopolies to only a very limited degree and that much of their business is highly competitive. If the electric utility be taken as an example, the various services offered are more or less competitive, with the possible exception of the use of electricity for domestic lighting. With respect to those parts of the utility's market which are not subject to direct competitive influences, it is contended that the elasticity of demand is such, due to the competition of alternative demands for the consumer's expenditures, that a policy of low rates would accomplish a maximizing of profits to the company. It thus becomes a matter of enlightened self-interest for the management to institute a policy of low promotional rates, benefiting both the company and the consumer. It is said that this policy would serve as an encouragement to the selection of progressive management, and that there would be a strong incentive to adopt a progressive policy both with respect to technical advances in the industry and to more intensive market development. Furthermore, if changes in rates and charges could be instituted without the necessity of securing any formal commission approval, the management would feel free to experiment with rate reductions with the hope of encouraging increased consumption, knowing that if these expectations should be disappointed it would be possible to restore rates to their prior level.

The function of the commission under such regulation would be quite limited. Intervention would be justified on only two conditions. First, the commission would be justified in imposing rate orders upon the company when the management was so unintelligent and so short-sighted as to fail to see that the largest profits could be obtained by a policy of rate reduction. Secondly, commission interference would be justified when discrimination was found to exist.

OBJECTIONS TO THE PROPOSAL. The advocacy of a *laissez-faire* policy with respect to the regulation of utility rates raises serious misgivings. These misgivings concern both the facts with respect to the rendition of utility services and the limits to the identity of interests between utilities and their consumers.

(1) As a practical matter, it is probably true that there is far more identity of interest between utility companies and the consuming public than relations between utilities and the public would sometimes seem to indicate. The experience of companies that have followed a vigorous and progressive program in the reduction of charges has indicated convincingly that the demand for utility services is more elastic than had been assumed and that within limits the enlightened self-interest of the utility is identical with that of the consuming

⁴⁰ New York, Leg. doc. No. 75 (1930), pp. 98-99.

public. Nevertheless, every decision to reduce rates always imposes a substantial risk which management sometimes hesitates to assume when present earnings are satisfactory.

(2) Critics of the *laissez-faire* program of rate regulation are not persuaded that the competitive influences under which utilities operate suffice to protect the consumer. There is no such close competition from substitute or alternative services as to guarantee that the company will charge only reasonable rates and that it will be impelled to adopt a policy of progressive rate reductions. Indeed, it may appear that enlarged consumption of the utility's service is dependent upon factors other than the cost of the service; perhaps increased consumption can be anticipated only if the consumers are able to make large expenditures for equipment, such as refrigerators, stoves, water heaters, et cetera. There is no reason to assume that competition is so direct and compelling as to force utility managements to offer all consumers the lowest feasible rate.

(3) The most telling criticism of the *laissez-faire* attitude toward utility rates is concerned with the nature of the price policies that prevail under monopoly and competitive conditions. The monopolist, under the same conditions with respect to investment and market demand, will always find it to his advantage to charge higher rates than would prevail if competition existed. Monopoly profits are always maximized when price is above the competitive level and output is restricted in relation to the quantity that would be offered under competitive conditions.⁴¹

Of course, the utility is in a position to follow a policy of differential pricing; that is, it is not under the necessity of offering all units of its output at the same price, but it may offer additional units of output at a lower price without lowering the existing price for the established volume of sales. The opportunity to pursue a policy of differential pricing will lead the utility to offer lower rates on additional increments of output where those rates will be in excess of the cost of supplying that additional output. Up to a certain point, the interest of the utility and its consumers will be identical and the utility management will follow presumably a policy of rate reduction; but it is almost certain that rates will not be reduced to the minimum necessary to attract and retain capital for the industry.⁴²

6. A MODIFICATION OF THE PRUDENT-INVESTMENT PROGRAM

GUIDING PRINCIPLES. From the experience of the past and the proposals for reform, is it possible to formulate a program of utility rate control that will do justice to consumers and investors and also be capable of effective adminis-

⁴¹ This point has been fully considered in Chapter X, Sec. 2.

⁴² The advocates of the *laissez-faire* theory of rate making should be credited with having emphasized what should have been obvious without their criticism of the existing scheme of regulation. The public interest in reasonable rates is not to be identified with the amount or rate of a utility's earnings. The moderateness of the utility's earnings is no guarantee that the rates are reasonable. Low earnings by the utility may be associated with a backward and unprogressive policy that keeps rates at unnecessarily high levels or with an ultra-liberal policy that reduces rates to the very minimum at which the company can afford to serve. Indeed, the expression "afford to serve" is itself somewhat misleading; the price at which a company can afford to

tration? What principles should be guiding in determining such a program? In this country, utility services are provided principally by privately owned corporations, and it may be assumed that such private operation will continue to be a dominant source of supply for the future. However, the nature of the service and its relation to modern standards of living make it of acute public importance; the recognition of its public importance is found in the principle that utility rates must be reasonable and nondiscriminatory.

A recognition both of the nature of the industries involved and the character of the services rendered leads to the selection of two guiding principles for the appropriate program of rate regulation. First, the cost basis is fundamental in the regulation of rates. The cost basis applies not only with respect to operating costs, taxes, and depreciation, but also with respect to the costs of the capital investment with which the service is rendered. Secondly, utility companies are going concerns, and if they are to continue as such and render satisfactory service, they must be able to raise new capital as the demand for the service expands; not only must they be able to raise adequate capital at all times, but they must be able to raise capital on terms as favorable as any the investment market affords.

It is with respect to this second guiding principle, the ability to attract new capital, that the prudent-investment plan reveals certain defects, particularly in the treatment of common stock. Clearly, the investment in common stock is of critical importance if the utility is to maintain a balanced capital structure, and if the cost of capital is to be kept at economical levels. The inability of a utility to issue new common stock would soon result in top-heavy capital structure, to the detriment of both the investor and the consumer. No plan of regulation which does not preserve the investment character of utility securities can be said to serve the interest of consumers, however low the rates and charges may be temporarily.

The proposals which follow meet these criteria and promise effective rate control.

THE RATE BASE. There are no convincing criticisms of the prudent-investment program so far as concerns the character and determination of the rate base, and these proposals follow the prudent-investment principles with respect thereto. By inaugurating the plan with an initial valuation coinciding with the fair value of the utility property, the legitimate expectations of present investors as to the earning power of their investment would be recognized and protected. If existing investors elect to leave their funds with the utility under the new program of control, it may be said that they acquiesce in the future scheme of regulation which this program envisages. Inasmuch as the initial valuation would fix for all times the book value of the present assets of the company, there would be no reason why the commission should not be provided with the funds and with the staff necessary to do an accurate and thorough job.⁴³

serve is significantly influenced by the volume of its business; the company may be better able to serve at a low rate than at a high rate.

⁴³ The valuation procedure should be practical. It should not attempt refinements that are costly and time-consuming where the resulting differences in the valuation of the property would be immaterial.

The question may be raised as to whether the initial valuation should not be based upon original-cost figures. During the 1920's utility construction costs remained below the wartime level, and with the crash of 1929 these costs fell sharply until 1933. With respect to many utility properties, perhaps indeed with respect to most, the original cost of their properties is not substantially different from their present fair value.⁴⁴ Since 1935 an increasing proportion of utilities are following prescribed systems of accounts which require the actual original cost of their used and useful property to be determined and recorded.⁴⁵ The acceptance of the original-cost figures for the determination of the rate base would not only be in conformity with the basic principle of the prudent-investment program, but where these original-cost figures are already in existence or are in process of determination, the commission and the utility would be spared the time and the expense of a valuation. It may be expected that a substantial proportion of the companies would accept without contest an initial rate base determined in this manner.

After the inauguration of the plan, the rate base should be kept current through accounting supervision of all capital additions and retirements. Since the operation of the plan would depend so largely upon accounting techniques, it would be desirable, both for the utility and for the regulatory authority, to have the utility's capital accounts rewritten to reflect the initial rate base.

It is proposed that the property acquired through the reinvestment of earnings should be recognized as a part of the rate base, entitled to the same earnings that would accrue on any common-stock investment. The subsequent recommendations with respect to the administration of the utility's income would limit the earnings available for reinvestment to those which might otherwise be distributed to investors in the form of dividends.⁴⁶

THE RATE OF RETURN. The prudent-investment program is on sound grounds when it eschews the use of a blanket rate of return on the entire investment such as the present-value method commonly utilizes. The present plan proposes to use a composite rate of return, and one that is adjustable to the actual costs imposed on the utility by its capital investment. This composite return would be calculated to allow for interest on the outstanding bonds, the contractual rate of dividends on the outstanding preferred stock, the amortization of any discount on bonds and stocks, plus a fair return to the common stock.

The return would not provide for a predetermined and unchanging dividend on the common stock. Instead, the return would allow such earnings on the common-stock equity as should appear necessary, with due consideration for any reinvested earnings that are credited to the common stockholders, to

⁴⁴ Troxel, "Indexes of Construction Cost for Public Utility Industries," 16 *Jour. of Land & Public Utility Econ.* 363 (1940).

⁴⁵ Original cost is defined as the actual cost of the property at the time it is first devoted to the public service, either by the present utility or by its predecessor.

⁴⁶ In the determination of the initial valuation or rate base, property acquired through the reinvestment of earnings should be recognized as entitled to a full return, irrespective of whether the earnings reinvested were normal earnings or excessive earnings. For a discussion of this point, see Chapter XIII.

afford a return adequate to insure the ability of the utility to raise new capital through the sale of common stock under all normal circumstances.⁴⁷

ADMINISTRATION OF UTILITY INCOME. The proposed plan defines the utility's right to income in explicit terms. The question arises, therefore, as to what procedure shall be followed if the utility's income falls below the specified fair return, and what disposition may be made of any excess earnings which may be realized.

With respect to deficiencies in income, the recommendations of the New York bill are well designed to safeguard the utility's credit. Provision should be made for the accumulation of an earnings-equalization reserve, and the utility should be allowed to draw on this reserve only to make good any deficiency in earnings in any given year. The presence of such a reserve would add to the security of the investor; it would also benefit the consumer by reducing the risks of utility investments and by making capital more readily available on more economical terms. Should the balance of the earnings-equalization reserve be insufficient to care for any deficiency in earnings, then the further recommendation of the New York bill should be followed: namely, in any subsequent year the utility should be entitled to pay as dividends not only the annual dividend for the current year, but an amount equal to any deficiencies accrued during the three preceding years.

The recommendations with respect to the treatment of earnings in excess of the stipulated fair return are an essential part of the plan. It is proposed that earnings in excess of a fair return be divided into two equal shares, one to go to the utility and one to be held in trust for the consuming public. The utility should be required to accumulate its share in an earnings-equalization reserve as long as the balance of that reserve is less than 20 per cent of the rate base. In any year when the company has excess earnings and the earnings-equalization reserve is equal to 20 per cent of the rate base, the utility's share of the excess earnings would be available for any corporate purpose—an extra dividend to stockholders, a bonus to management, or a profit-sharing agreement for the benefit of the workers. The disposition of excess earnings accruing to the company when its reserve stands at 20 per cent of the rate base would rest solely within the discretion of the utility's management and would not be subject to commission control.

The one-half of the excess earnings held in trust for the consuming public should be used for the amortization of the utility's investments, and for the concurrent reduction of the rate base. In practice, this would mean that the

⁴⁷ Where the utility has a substantial surplus created through the reinvestment of past earnings, it is quite likely that common stock would be readily salable at a price substantially in excess of par even though existing common stockholders were receiving less than what would normally be regarded as a fair return on the par value of their common stock plus their equity in the corporate surplus. Where there has been a substantial reinvestment of earnings, fairness to the common stockholders would seem to require that the commission take account of this. The commission might make allowance for reinvested earnings by allowing the common stock such earnings as requisite to maintain its price at a figure consonant with its legitimate book value, so that the yield on the common stock would coincide approximately with the yield realized on other similar investments.

It will be recognized that this definition of the reasonable return with reference to the legitimate book value of the stock makes use of the principles developed in Chapter XV.

excess earnings set aside for the benefit of the consuming public would presumably be used for the retirement of the utility's outstanding bonds, so long as any bonds were outstanding; otherwise, these earnings would be used to retire other outstanding securities, beginning with the senior securities. To give practical effect to this plan, it would be advisable to issue securities callable at figures not greatly in excess of par. If the outstanding securities should not be callable at a reasonable price and if the market price should appear too high, the funds should be accumulated with a trustee for retirement of securities at maturity or for open-market purchases when the price of the security should fall. Or the funds could be used for capital expansion, with the proviso that the property so acquired should never be included in the rate base. With each retirement of outstanding securities, there would be a corresponding reduction in the utility's requirements with respect to the fair return. In effect, the investment represented by the reacquired securities would henceforth be recognized as a part of the consumers' equity in the property.

RATE ADJUSTMENTS. After the plan has been in operation for a period of years, for example, when the earnings-equalization reserve has accumulated to a sum equal to 10 per cent of the rate base, the reserve might be used as a barometer fund. Following the provisions of the New York bill, the commission should be instructed to provide for an immediate rate increase sufficient to enable the utility to earn the prescribed fair return whenever the balance in the earnings-equalization reserve should fall below 5 per cent of the rate base. Downward rate adjustments should be required whenever the current earnings of the company are obviously excessive or whenever the earnings-equalization reserve is above 20 per cent of the rate base. It is suggested that the provision for an automatic downward revision in rates should be operative whenever *realized* rate of return should be more than $\frac{1}{2}$ of 1 per cent above the *fair* rate of return. The downward revision in rates should amount to one-half of the earnings in excess of the fair rate of return. This part of the recommendation—namely, that the reduction in earnings should be only one-half of the excess earnings—is considered important as a device to encourage efficiency in management. By reducing rates each year by an amount equal to one-half of the excess earnings, the utility management will be assured of retaining for a period of years the diminishing benefits of any economies which they are able to effect.

The operation of these rate reductions may be illustrated by assuming a utility with a rate base of \$1,000,000 and a fair rate of return of 6 per cent—that is, the utility would be entitled to a fair return of \$60,000 a year. If in any year the utility should have earnings of \$80,000, the excess earnings would amount to \$20,000; \$10,000 of the \$20,000 would accrue to the benefit of the company, and if its earnings-equalization reserve then equaled 20 per cent of \$1,000,000, it would be available for distribution as dividends or for other corporate use. One-half of the excess earnings, or \$10,000, would accrue to the benefit of the consumers, and would be used for a proportional retirement of its outstanding securities. For the following year the commission would prescribe a rate reduction calculated to effect a saving of \$10,000. If, in the following year, the utility had earnings of \$72,000, and if the fair return continued to be \$60,000,

the excess earnings would be \$12,000; at the beginning of the third year, the commission would prescribe a rate reduction calculated to absorb one-half of the current excess earnings, or a reduction of \$6,000. Each retirement of securities would reduce the rate base, which would be \$984,000 (\$1,000,000 - \$16,000) at the beginning of the third year.

It will be noted that this proposal borrows from the Washington plan to the extent of providing for regular rate reductions equal to one-half of the excess earnings which the utility is enjoying. This gives consumers the benefit of an immediate saving, and also it gives the company the benefits of the increased consumption, with the concomitant reduction in unit costs, that usually follows from rate reductions. The proposal differs in reserving for the benefit of consumers a part of the excess income earned under the rates which have previously been approved as reasonable by the commission. From the point of view of the consumer, it may be asked why the utility should not be required to hold the entire amount of the excess earnings in trust for the consumers, to be used for the purpose of amortizing its investment and reducing its rate base. In answer, it may be suggested that the proposed division of excess earnings between the company and the consumers is likely to be more beneficial to the consumers in the long run through the stimulus to efficiency which is provided by recognizing the company's right to share in the excess earnings which have presumably been created, at least in part, through the management's efforts.

THE MERITS OF THE PLAN. The proposed plan appears attractive from several points of view.

(1) The plan retains the principal advantage of the prudent-investment program, namely, stability of the rate base. By providing a stable rate base to be kept current through accounting control, the frustrations and injustices so characteristic of present fair value are avoided.

(2) The plan provides for the explicit determination of the respective rights and obligations of the utility and its consumers with respect to rates and charges, and with respect to earnings and the allocation of utility income. This certainty with respect to the rights and obligations of the company and its consumers should lead to a recognition of the identity of interest of company and consumers in the intensive development of the market through a vigorous policy of rate reductions.

(3) The determination of the rate of return applies the prudent-investment principle. The amount of the return is calculated according to the needs of the company and is based directly upon the payments which the company makes on its outstanding securities. With respect to the appropriate return for each class of security outstanding, the cost standard is to be used. Only in recognizing that reinvested earnings are a part of the common-stock equity of the utility does the plan depart from a strict adherence to the utility's needs in determining the amount of revenue which the utility should be permitted to earn; and this departure from the strict needs standard appears justifiable as a method of encouraging conservative financing and the accumulation of a reasonable surplus by the utility.

(4) The plan recognizes that the investment character of the common

stock is the key to a sound financial structure. The sale of bonds and preferred stock, and the cost at which capital is available to the company, depend upon keeping fixed charges within reasonable bounds. If the financial health of the utility is to be preserved, it is essential that a due proportion of its new-capital requirements be provided through the sale of common stock. Hence, it must be a fundamental objective of regulatory policy to maintain the investment standing of the utility common stock.

(5) If the regulatory program is successful in achieving the preceding objective, the utility will presumably be in a position to raise new capital through the sale of whatever class of securities is most appropriate in the light of the existing conditions of the investment market.

(6) The proposals with respect to the administration of excess income, in so far as they provide for the retirement of outstanding securities through the application of the excess earnings segregated for the benefit of the consuming public, would gradually strengthen the company financially.

(7) One of the most attractive features of the proposed plan is its stimulus to managerial efficiency. The incentive is provided by the explicit recognition of the utility's right to one-half of all surplus earnings after meeting the requirements with respect to the fair return. If efficiency is to be encouraged, two conditions are essential: first, the company must be permitted to share in any benefits that result from its success in achieving greater efficiency; and secondly, any *one* gain in efficiency must not give a right to a permanently enlarged income lest the company rest content with its existing income. The proposed plan enables the company to maintain its existing income or even to increase that income if it is able to continue to achieve gains in efficiency; but as soon as it ceases to effect new economies, the amount of income falls gradually and automatically until it reaches the stipulated fair return. It is suggested that this arrangement would provide a more satisfactory method both for rewarding, and for stimulating, efficiency than any which regulatory authorities have developed.

(8) The proposals with respect to the administration of income are more advantageous for the consumer than those plans which simply provide for rate reductions proportional to the excess earnings. Under the proposals here advanced, any overpayments by consumers redound to their benefit, not only through rate reductions during the following year, but also through the immediate application of one-half of the excess earnings to the retirement of outstanding securities, thereby further reducing the utility's requirements with respect to the fair return.

(9) In the case of a successful utility, the application of the proposed plan of rate regulation would presumably lead to progressive rate reductions. These reductions would follow partly from the stimulus to efficiency, partly from the reduced requirements with respect to the fair return with the retirement of outstanding securities, and partly from the lower unit costs to the company that would follow increases in the consumption of its service. The plan offers cumulative benefits to both consumers and investors.

OBJECTIONS TO THE PLAN. These recommendations with respect to rate regulation may give rise to objections on both the legal and the economic levels.

(1) The most serious criticism has to do with its constitutionality. Two features of the plan are attacked: the constitutionality of the prudent-investment method of determining the rate base, and the constitutionality of the provisions for the administration of the utility's income. The reasons for believing in the constitutionality of a prudent-investment program of rate control have been set forth in the preceding discussion of the prudent-investment proposal. As to the second objection, no plan of state regulation requiring the segregation of a part of the excess earnings of utilities for the benefit of the consuming public has ever been placed in effect or passed upon by the courts. Those who attack the constitutionality of this feature of the plan do so primarily on the authority of the Supreme Court's holding in the *New York Telephone Company* case.⁴⁸ No doubt that decision would constitute a precedent unfavorable to any attempt at recapturing utility earnings where such a recapture was not an essential part of an orderly scheme of rate regulation.

In support of the constitutionality of the proposed scheme to segregate half of the excess income of the utility for the purpose of reducing the rate base and retiring outstanding securities, it may be noted that the company is entitled to no more than a fair return. If the commission chooses to be liberal in allowing rates which may produce more than the prescribed fair return (and the proposal would be conducive to such a liberal attitude on the part of the regulatory authorities), these rates would be established with the understanding that any income beyond the fair return would be segregated according to the requirements of the plan.

The proposals respecting the disposition of excess income are quite similar in their character to the recapture provision of the Transportation Act of 1920. In fact, the recapture provisions of the Transportation Act were less favorable to the railroads than the present proposal would be to utility companies. Instead of requiring that half of the excess income be paid into a fund to be available for making loans to other corporations, the plan proposes that the excess earnings held in trust for the consuming public should be used to retire the outstanding securities of the utility. It will be recalled that the challenge to the constitutionality of the recapture clause was unsuccessful. The Supreme Court upheld the right of the federal government to provide for taking one-half of the earnings in excess of the fair rate of return prescribed. In upholding the constitutionality of the recapture provisions, the Court remarked specifically on the fact that the recapture program was an integral part of the statutory program of rate making.⁴⁹ The Act specifically provided that

⁴⁸ 271 U.S. 23, 31-32 (1926). Quoted *supra*, p. 389.

⁴⁹ "... The carrier owning and operating a railroad, however strong financially, however economical in its facilities, or favorably situated as to traffic, is not entitled as of constitutional right to more than a fair net operating income upon the value of its properties which are being devoted to transportation. By investment in a business dedicated to public service the owner must recognize that, as compared with investment in private business, he cannot expect either high or speculative dividends but that his obligation limits him to only fair or reasonable profit. If the company owned the only railroad engaged in transportation in a given section and was doing all of the business, this would be clear. If it receives a fair return on its property, why should it make any difference that other and competing railroads in the same section are permitted to receive higher rates for a service which it costs them more to render and from which they receive no better net return?

"... The reduction of the net operating return provided by the recapture clause is, as near

excess earnings were held by the carrier as trustee for the public, and the Court found that the provisions with respect to the disposition of this excess income did not result in any taking of property without due processes of law:

"... The excess caused by the discrepancy between the standard of reasonableness for the shipper and that for the carrier due to the necessity of maintaining uniform rates to be charged the shippers, may properly be appropriated by the Government for public uses because the appropriation takes away nothing which equitably belongs either to the shipper or to the carrier."⁵⁰ This decision certainly suggests the competence of state legislatures (or of the federal government in the case of utilities subject to its jurisdiction) to provide a program of rate control which embodies a provision for devoting a part of the utility's excess income to public purposes.

As to that part of the program which defines the rate of return as the sum required to provide interest on bonds, preferred dividends, and fair earnings on the common-stock equity, it is difficult to see how any constitutional objection could prevail. The whole objective of the plan is to recognize the utility's obligations with respect to its senior security holders while permitting the utility such earnings on its equity stock as to enable the company to raise new capital as required through the issue of additional common stock. Certainly if the plan accomplishes this objective no plea of confiscation could prevail. As long as investors are willing to buy new issues of a utility's stock, it is unrealistic, if not logically impossible, to argue that any confiscation of their investment exists.

(2) The application of the excess earnings held in trust for the consuming public to the retirement of outstanding securities is said to be objectionable because it results in an involuntary termination of the investor's association with the utility. This objection carries little weight. The right of the investor to a fair return so long as his funds are invested in the utility enterprise is safeguarded. If his securities are callable, as the plan contemplates, the investor has no right as against the utility corporation to insist that his investment continue.⁵¹ Certainly he has no superior right as against the state. If he receives the contractual payment for the termination of his investment, he can raise no objection.

(3) It has been said that the proposed plan will result in the establishment of public ownership. This result would follow, it is alleged, from the retirement of all of the outstanding securities of the utility company. As a practical matter, this result is highly unlikely. The new-capital requirements of most utilities would normally be greater than the excess earnings available for the retirement of outstanding securities. The plan would probably do little more than bring about a more conservative capital structure—more conservative in the relation of the total capitalization to the investment in real assets, and more conservative in the proportion of common stocks to senior securities.

as may be, the same thing as if rates had all been reduced proportionately before collection." (*Dayton-Goose Creek Ry. v. U.S.*, 263 U.S. 456, 481, 483 [1924].)

⁵⁰ 263 U.S. 456, 484.

⁵¹ If the securities are not callable, the company could deposit the funds with the trustee for the retirement of the bonds at their maturity. Or if the market price of the bonds should not be too high, the bonds could be purchased in the market and retired.

- Since the plan provides for amortization of the investment and reduction in the rate base, it affords the consumer all of the advantages that he might attain from the policies governing the administration of income for publicly operated plants; and in addition, he has whatever advantages may come from private initiative in operation. It might be argued that this plan would remove the basis for a public-ownership movement by giving the consumer all that he could hope to obtain from successful public ownership.

(4) There is one unanswerable criticism of the prudent-investment or cost program of rate control, but it applies equally to any scheme of rate regulation that bases a utility's right to income on either the value of its property or on its outstanding security issues. Competing demands for the consumers' dollars, as well as the more direct competition of substitute services, may make it impossible for a utility to earn a fair return on any rate base, however "prudent" its investment may have been at the time it was made. Regulation does not guarantee the utility a return irrespective of changes in the demand for its service. Thus, prudent investment and present value (except in the sense of the capital value of present and prospective earnings) are equally irrelevant to the rate policies of most steam railroads and many street railways. Rates cannot be established above the "value of the service," or, to state the same principle more practically, rates should not be above the level which will afford the regulated enterprise a maximum return.

A closely related criticism is suggested by the experience of the Interstate Commerce Commission with the regulation of the steam railroads. Where a utility is unusually sensitive to cyclical fluctuations in business, as are the railroads, the extreme fluctuations in their earnings make it impractical to attempt to set rates to produce annually a uniform return on a rate base. The common-sense policy for such utilities is to permit a fair return over the period of the business cycle, accumulating a large earnings-equalization reserve if conditions permit. A sound rate policy is impossible without a sound capitalization policy; such utilities should have the very minimum of fixed charges.

Regulation of rates is the keystone to the entire program of public utility control. The present-fair-value method and its modifications have proved incapable of effective administration. A satisfactory scheme of regulation must possess sufficient flexibility to preserve both reasonable charges and the financial health of the utility under diverse and changing conditions; it must secure efficiency and competence in the direction and management of the utility; and it must be capable of effective administration. Of the numerous alternatives to the present-fair-value procedure, the modified prudent-investment program offers the most promise of achieving fairness for consumers, justice for investors, progress for the industry, and effectiveness in regulation.

REGULATION OF UTILITY EXPENSES

I. THE PROBLEM OF EXPENSE CONTROL

THE IMPORTANCE OF UTILITY EXPENSES. If it is the purpose of utility regulation to secure for consumers the minimum reasonable rates that are consistent with satisfactory service, then the regulation of utility expenses is quantitatively of greater importance than the control over the net income of public service companies. The significance of utility expenses can be made concrete by reference to the Composite Income Account which the Federal Power Commission presented as part of its Statistics of Electric Utilities for 1937.¹

From this statement it appears that on the average approximately \$70 in every \$100 of utility revenue is required for expenses other than the fair return. Nearly \$47 is allocated to operating expenses, including maintenance; approximately \$9 is appropriated for depreciation expense; and something less than \$14 is paid out as taxes. \$30 remains as the "fair return"; and of this sum interest and related items absorb \$13, and \$20 (including nearly \$3 of non-operating revenue) is available for dividend payments and for earned surplus account. Quantitatively, a 10 per cent reduction in expenses would save consumers more than twice as much as a similar reduction in the "fair return" items. Similar figures for all utilities as of 1937, as prepared by the Wisconsin Public Service Commission, are presented in Table 41.²

THE EARLY ATTITUDE TOWARD REGULATION OF EXPENSES. The relation between the operating and related expenses and the charges for the service have been recognized from the beginning of rate regulation. Yet regulation has until recently concentrated on the fair return. Two circumstances were responsible for the relative neglect of operating expenses by regulatory commissions. First, despite early decisions by the Supreme Court recognizing the right of commission inquiry into the propriety of company expenditures, subsequent decisions restrictive of commission authority persuaded many commissions that they could not invade "managerial fields." Secondly, the commissions, in common with others concerned with regulation, assumed that the interests of management and consumers in keeping operating expenses at a minimum were identical, and that the judgment of the management with respect to the necessity of operating expenditures might safely be accepted.

THE PRESENT CONCERN ABOUT EXPENSES. The conventional attitude of easy acceptance of company claims regarding operating expenses has undergone a radical change since the middle 1920's when the Federal Trade Commission began its inquiry into the activities of holding companies. It is now quite generally recognized that the operating expenses require as careful and critical scrutiny as the claims for a "fair return on the fair value of the property." The

¹ See Table 17, p. 58.

² The more detailed figures indicate which categories of expense offer the larger opportunities for savings.

changes that may create conflicts between the interests of consumers and those of the management or control with regard to operating expenditures have been described elsewhere.³ The increasing frequency with which the functions of generation or production and transmission, in the electric power and natural-gas industries particularly, are performed by corporations distinct from those engaged in local distribution creates opportunities for an inflation of the operating expenses, especially if the companies entering into such wholesale transactions are controlled by a common interest. A similar situation arises when affiliates of the holding company have contracts for the performance of services—managerial, supervisory, purchasing, legal, engineering, et cetera—for the subsidiary operating companies.

The pressure to inquire more critically into operating expenses was reinforced by the depression after the 1930's. If rate increases could be justified by the companies on the basis of rising costs of operation, why could not declining operating costs create the margin out of which rate reductions might come? And if the operating expenses concealed profits to affiliated interests, were not even larger reductions feasible without trenching on the legitimate "fair return" of the utility?

Another consideration lends support to active supervision of operating expenses. Utility companies operate largely under the protection of franchises which protect them from the competition of a like service. It is desirable, therefore, that there should be a searching examination of operating expenses by regulatory authorities as a stimulus to managerial efficiency.

2. COMMISSION JURISDICTION

THE RIGHT TO REGULATE UTILITY EXPENDITURES. The utility is normally entitled to revenues adequate to cover its operating expenses, including taxes and depreciation, plus a reasonable return on the investment with which it serves the public. But this right of the utility is dependent upon the full discharge of its obligations to the consuming public, among which is the fundamental duty to observe due diligence in management, to maintain a high standard of efficiency, and to conduct its affairs with maximum economy. A failure to recognize the jurisdiction of regulatory commissions over utility expenditures, operating and non-operating, would render rate regulation meaningless, subjecting the judgment and orders of the commission to the management's control.

The majority of the utility statutes have contained no specific reference to the power of the commission to regulate operating and other expenses. Yet the judiciary has recognized the right of the regulatory authorities to concern themselves with the expenses of utility enterprises. In 1892 in *Chicago & Grand Trunk Railway v. Wellman*, Mr. Justice Brewer's dicta upholding the regulation of railroad fares by Minnesota indicated that supervision of operating expenses was an essential part of the power to establish reasonable rates:

"... It is agreed that the defendant's operating expenses for 1888 were \$2,404,516.54. Of what do these operating expenses consist? Are they made up

³ Chapter IV.

TABLE
COMPOSITE STATEMENT OF REVENUES AND Ex

<i>Classification of Revenues and Expenses</i>	<i>Electric Utilities</i>		<i>Gas Utilities</i>	
		Per Cent of Total Operating Revenues		Per Cent of Total Operating Revenues
Operating Revenues:				
Sales to Ultimate Consumers	\$49,672,279	89	\$12,562,622	95
Sales to Other Utilities	5,294,185	10	393,577	3
Sales to Public Authorities	—	—	—	—
Other Operating Revenues	745,490	1	225,902	2
Total Operating Revenues	\$55,711,954	100	\$13,182,101	100
Operating Expenses	23,255,135	41	\$ 7,498,664	57
Production	13,057,837	23	4,261,204	32
Transmission and Distribution	4,148,179	7	1,157,325	9
Customers Accounting and Collecting	1,653,537	3	719,852	5
Sales Promotion	1,408,828	3	463,611	4
Administrative and General Maintenance	2,986,754	5	896,672	7
Traffic	—	—	—	—
Commercial	—	—	—	—
Management Fees	—	—	—	—
Conducting Transportation	—	—	—	—
Source of Water Supply	—	—	—	—
Power and Pumping	—	—	—	—
Purification	—	—	—	—
Depreciation	\$ 6,698,952	12	\$ 1,227,262	9
Taxes	9,061,306	16	1,761,371	13
Rent	44,887	1	20,060	1
Uncollectible Bills	—	—	—	—
Total Revenue Deductions	\$39,060,280	70	\$10,507,357	80
Utility Operating Income	\$16,651,674	30	\$ 2,674,744	20

^a Exchange service revenue.^b Toll service revenue.^c Other transportation revenue.

partially of extravagant salaries; fifty to one hundred thousand dollars to the president, and in like proportions to subordinate officers? Surely, before the courts are called upon to adjudge an act of the Legislature fixing the maximum passenger rates for railroad companies to be unconstitutional, on the ground that its enforcement would prevent the stockholders from receiving any dividends on their investments, or the bondholders any interest on their loans, they should be fully advised as to what is done with the receipts and earnings

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PENSES FOR WISCONSIN UTILITIES FOR 1937*

Telephone Utilities		Street Railways		Water Utilities	
	Per Cent of Total Operating Revenues		Per Cent of Total Operating Revenues		Per Cent of Total Operating Revenues
\$15,869,203 ^a	74	\$8,843,477	99	\$6,594,854	75
4,682,703 ^b	22	14,383 ^c	0	300,380	3
802,552	4	108,140	1	1,892,233	21
				80,620	1
\$21,354,458	100	\$8,966,000	100	\$8,868,087	100
\$11,663,940	55	\$5,705,469	64	\$3,736,631	42
—	—	—	—	—	—
—	—	—	—	746,439	8
—	—	—	—	344,656	4
—	—	—	—	1,205	0
1,799,788	8	621,964	7	559,796	6
3,973,275	19	1,283,016	15	—	—
4,182,167	20	23,807	0	—	—
1,460,307	7	—	—	—	—
248,403	1	—	—	—	—
—	—	3,776,682	42	—	—
—	—	—	—	269,862	3
—	—	—	—	1,585,100	18
—	—	—	—	229,573	3
\$ 3,165,447	15	\$1,290,161	14	\$1,120,522	13
2,975,142	14	739,519	8	970,128	11
189,146	1	15,505	0	—	—
45,817	0	—	—	—	—
\$18,039,492	85	\$7,741,654	86	\$5,827,281	66
\$ 3,314,966	15	\$1,224,348	14	\$3,040,806	34

* Source: Wisconsin Public Service Commission, *Statistics of Wisconsin Public Utilities, 1936-37-38* (1939).

of the company; for, if so advised, it might clearly appear that a prudent and honest management would, within the rates prescribed, secure to the bondholders their interest, and to the stockholders reasonable dividends. While the protection of vested rights of property is a supreme duty of the courts, it has not come to this, that the legislative power rests subservient to the discretion of any railroad corporation which may, by exorbitant and unreasonable salaries, or in some other improper way, transfer its earnings into what it is

pleased to call 'operating expenses.'"⁴ The unqualified recognition of commission jurisdiction over the operating expenses of utilities subject to their control is most clearly seen in the increasing number of decisions in which the Supreme Court has sustained the right of commissions to inquire into the charges made by affiliated interests for natural gas sold at wholesale to local distributing companies or for services performed by units of a holding-company system.⁵

The record of judicial review is not without precedents which are restrictive of commission authority over utility operating expenditures. Such restrictions are usually couched in terms of not interfering with the functions of management.⁶ The proposition that the expenditures of utility companies fall within the field of managerial discretion beyond the reach of regulatory authority is replete with danger for consumers and investors alike, and has fortunately been superseded. The more modern rule was set forth by Mr. Justice Roberts in 1936: "The contention is that the amount to be expended for these purposes [selling costs of market agencies at Union Stockyards in Chicago] is purely a question of managerial judgment. But this overlooks the consideration that the charge is for a public service, and regulation cannot be frustrated by a requirement that the rate be made to compensate extravagant or unnecessary costs for these or any purposes."⁷

The earlier remarks of the courts with respect to the propriety of operating expenses claimed by utility companies suggested that the burden of establishing the impropriety of company claims rested with the regulatory agency. In the absence of evidence as to "bad faith" or "mismanagement," there appeared to be an assumption that the management's judgment should prevail. Administrative efficiency in the regulation of operating expenses, as in other phases of regulation, demands a reversal of this burden of proof. The management should be required to establish the reasonableness and propriety of all expenditures, operating as well as capital, expenses. This burden of proof

⁴ 143 U.S. 339, 345-346 (1892).

⁵ *Corporation Commission v. Wichita Gas Co.*, 290 U.S. 561 (1934); *Western Distributing Co. v. Kansas*, 285 U.S. 119 (1932); *Dayton P. & L. Co. v. Comm.* 292 U.S. 290 (1934). See also *O'Gorman & Young v. Hartford Fire Ins. Co.*, 282 U.S. 251, 257 (1931).

⁶ The most frequently quoted pronouncement to this effect is to be found in the decision of Mr. Justice McReynolds in the *Southwestern Bell Telephone Company* case:

"The important item of expense disclosed by the Commission—\$174,048.60—is 55% of the 4½% of gross revenues paid by plaintiff in error to the American Telephone & Telegraph Company as rents for receivers, transmitters, induction coils, etc., and for licenses and services under the customary form of contract between the latter Company and its subsidiaries. Four and one-half per cent is the ordinary charge paid voluntarily by local companies of the general system. There is nothing to indicate bad faith. So far as appears, plaintiff in error's board of directors has exercised a proper discretion about this matter requiring business judgment. It must never be forgotten that while the State may regulate with a view to enforcing reasonable rates and charges, it is not the owner of the property of public utility companies and is not clothed with the general power of management incident to ownership." (262 U.S. 276, 288-289 [1923].)

See also *Honston v. Southwestern Bell Tel. Co.*, 259 U.S. 318 (1922). For other discussions of the American Telephone & Telegraph Company license contracts, see *Comm. v. Mich. State Tel. Co.*, 228 Mich. 658, 200 N.W. 749 (1924); *Re Indiana Bell Tel. Co.*, P.U.R. 1924A, 1, 29-33 (Ind., 1923); *Re N.Y. Tel. Co.*, P.U.R. 1925C, 767, 817-825 (N.J., 1924); *Re Wis. Tel. Co.*, P.U.R. 1925D, 661, 674, 675 (Wis., 1925); *Re N.E. Tel. & Tel. Co.*, P.U.R. 1925E, 739, 746-748 (Mass., 1925). See further, *Wisconsin Tel. Co. v. Comm.*, 232 Wis. 274, 287 N.W. 122, 148 (1939).

⁷ *Acker v. United States*, 298 U.S. 426, 430-431.

should rest upon the company not simply when it challenges the rate orders of the commission in the courts, but also when the matter is before the commission.

In the regulation of operating expenses, commissions must be as scrupulous in observing the amenities of "due process" as in their determination of the rate base and the rate of return. Decisions as to the propriety of operating expenses must rest upon evidence openly presented, and the utility must have notice and opportunity to show the reasonableness and necessity of any expenditures questioned by the commission.⁸ In order to justify any expenditure, the utility must establish three facts: that the expense was actually incurred or will be incurred; that the expenditure is necessary to the discharge of its public duties; and that the amount of the expenditure is reasonable.⁹

THE EXERCISE OF CONTROL OVER OPERATING EXPENSES. For the most part, the regulation of operating expenses is not treated as a separate and distinct phase of commission activity. The regulation of operating expenses is normally an essential part of a rate proceeding. The control over accounting practices and the examination of the reports submitted to the commission by the companies, provide other opportunities for the commission to query any charges for operating expenditures which seem to be obviously improper. The recently adopted procedure in many of the states, requiring that all intercompany contracts be filed with the commission, has created an opportunity for an advanced consideration of these particular items.

REGULATORY TECHNIQUES. Three techniques have been applied to the control of utility expenditures: (1) the disallowance of improper charges, (2) the prohibition of expenditures and payments for improper items, and (3) control through budget estimates of future expenses submitted by the companies. The characteristics and effectiveness of each of these techniques requires examination.

The disallowance of improper expenses. The technique of "disallowing" improper operating expenses is one that developed without explicit legislative or judicial direction. It seems to have been the result of the philosophy that while a commission has the power to "regulate" the operating expenses of an utility it has no control over management and may not substitute its judgment for that of the management. The regulation of operating expenses thus partakes of the nature of accounting control, with the commission refusing to permit the company to record certain items of expenditure as operating expenses. The essence of "disallowing" an expense is to exclude it from those operating expenses that must be paid before the remaining utility revenue may be said to be available as a fair return on the investment. The effect of dis-

⁸ So much was forcefully asserted by Mr. Justice Cardozo in condemning the decision and procedure of the Public Utilities Commission of Ohio in the *West Ohio Gas Company* case:

"... A public utility will not be permitted to include negligent or wasteful losses [in this instance, loss of gas from leakage] among its operating charges. The waste or negligence, however, must be established by evidence of one kind or another, either direct or circumstantial. In all the pages of this record, there is neither a word nor a circumstance to charge the management with fault. . . . There is not even the shadow of a warning to the company that fault was imputed and that it must give evidence of care." (294 U.S. 63, 68 [1935].)

⁹ *Re Ripon United Teleph. Co.*, P.U.R. 1924A, 171 (Wis., 1923); *Commerce Comm. v. Pub. Serv. Co. of No. Ill.*, 4 P.U.R. (N.S.) 1 (Ill., 1934).

allowing an item of expense is to shift the burden of the expenditure from the consumers to the investors. The commission does not forbid the utility to make the expenditure; indeed, the expenditure may already have been incurred and paid, but it must be charged against funds otherwise available for the fair return.

It may be seriously questioned whether the "disallowance" technique is adequate. If the utility continues to incur operating expenses which the commission regards as improper, the revenue available for return on invested capital, assuming that the rates are so established as to afford only a reasonable return, must in time become inadequate to attract capital. Also, it may be asked if investors are not entitled to protection against mismanagement to the extent that commissions are able to provide it. In theory, the investors control the management, and if they disapprove of its conduct, they may elect a new and more competent board of directors. In practice, however, the investors are without effective means of making their interests articulate, and managements, being in charge of the proxy machinery, are likely to become self-perpetuating.

The prohibition of improper expenditures. From the foregoing it is clear that effective regulation of utility expenses must rest upon authority to prohibit improper expenditures. In the long history of utility regulation there has been no final decision respecting this authority. Indeed, in only a few states have the statutes explicitly conferred upon their commissions authority to prohibit the payment of unwarranted expenses. Specific statutory provisions have appeared chiefly with respect to depreciation charges, and though they have not been passed upon by the Supreme Court, the pronouncements in *Smith v. Illinois Bell Telephone Company* suggest that these provisions will be upheld.¹⁰ There is no reason to believe that the jurisdiction of regulatory authorities is more limited with respect to other operating expenses than with respect to depreciation charges. It may therefore be said that there is no constitutional obstacle to conferring upon regulatory authorities the power to prohibit expenditures which are unwarranted and improper. It is even possible that the courts would uphold the exercise of this authority as implied in the general power to regulate rates.

Budget control of future expenses. One of the difficulties of commission control over operating expenses has been that regulation has too often come after the expenses have been incurred and paid. If control is to be effective, commission action must precede the expenditure. Thus, since the more progressive utility companies have adopted, for managerial purposes, the practice of preparing budgets of both operating and capital expenditures for a year or more in advance, legislation might be enacted to require that all utilities prepare and submit such budgets to the appropriate commission.

Oregon has experimented with this form of control. Under an amendment of 1933, utility companies are required to file, on or before November first, a budget of expenditures for the following calendar year. A finding by the Commissioner that a particular expenditure would be unwise or imprudent has the

¹⁰ 282 U.S. 133, 149 (1930).

effect of prohibiting the company from incurring that expense or making that expenditure.¹¹

What are the requisites for the effective regulation of utility expenditures? From the foregoing discussion, it is apparent that regulation should precede the expenditure, rather than be confined to the "disallowance" of past expenses. Furthermore, active regulation should not be limited to those occasions when the company is before the commission in a matter involving its rates and charges; the regulation of operating expenses should be the continuing responsibility of the commission. Clearly, the filing of a budget of proposed expenditures is a satisfactory and fair proceeding for both the company and the regulatory authorities. The commission should possess authority to forbid an expenditure or to "disallow" it, according to the circumstances.¹²

3. GUIDING PRINCIPLES IN REGULATING OPERATING EXPENSES

TESTS OF REASONABLENESS. In the regulation of operating expenses, as in other phases of commission control, there is a need of standards or tests of the reasonableness of the sums which the companies claim as necessary expenditures. As the basic principle, there is the requirement that the utility have competent and efficient management, that the owners be responsible for providing honest and efficient management, and that consumers must not be prejudiced by any deficiency in management. It is generally agreed that honesty and efficiency are to be judged in the light of the data available at the time when managerial decisions are reached.

In testing the reasonableness of utility expenses, commissions have resort to two devices: the development of cost standards, and the comparison of costs, either of different accounting periods for the same utility, or of different utilities at the same time. However, relatively little use has been made of either device. The commissions have been without the funds necessary for the establishment of general cost standards for the different classes of utilities, and the utility companies have hesitated to give publicity to such cost studies as they have made, lest the data be misunderstood by the public or be used to support agitation for more rigorous regulation.

The same procedures govern the development of cost standards in the utility industries as in other fields of business: a study of the details of cost and a determination of the limits for all variable elements. If the problem of cost determination for utilities is more difficult, it is only because a larger proportion of utility expenditures are joint costs; but the complications arising from joint costs are of much the same character whether the joint items are a large or a small proportion of total costs.

¹¹ Oregon, *Laws of 1933*, Chapter 441. See also *Re Pacific Tel. & Tel. Co.*, 2 P.U.R. (N.S.) 384 (1933). Thus far the constitutionality of this statute has not been determined.

¹² It is conceivable that the company might be justified in making expenditures which could not properly be charged against consumers; hence not all expenditures that should be disallowed are appropriate subjects for orders of prohibition. In its reports the company should be required to call the attention of its security holders to any items of expense that have been disallowed by regulatory order, so that they may be duly warned to register any objections they may have with the management.

It would, of course, be advantageous if the same standards could be applied in regulating all utilities rendering the same service, but diversities in organization and differences in the conditions under which companies operate have prevented the preparation of satisfactory general standards. There are, however, more limited standards, which offer significant results and which are practicable and capable of ready development.

It may serve to simplify the discussion of cost standards if two descriptive designations be introduced at this point—unit costs and cost-relatives. *Unit costs* are familiar in utility valuations; they are equally available for testing operating expenses. Some costs are relatively standardized for all utilities using the same equipment and techniques; thus, assuming the same cost of fuel, the cost of generating a kilowatt-hour of energy with any specific type of generator should be uniform; the costs of meter repair and replacement, of meter reading, of billing, of equipment repairs, et cetera, should be fairly standard and are clearly determinate. Other cost standards that cannot be formulated in absolute terms are susceptible of reasonably explicit determination in the form of *relatives*: thus the relation of transmission losses to voltage, volume, and distance, the ratio of expenditures for sales promotion to gross revenue, or even the quite general "operating ratio" may serve to answer some of the questions which commissions should ask in the process of their regulation of the expenses of utility companies.

All the transactions of the company with other businesses provide unit costs or the raw materials from which such unit costs can be constructed. The extent to which unit costs may be explicitly determined depends partly on the detail with which the expenditures of the utility are recorded, and partly on the extent to which allocations are made at the time work is performed or expense is incurred. The attempt to develop unit costs for operating expenses would serve to direct attention to the more ambiguous aspects of expense accounting and should result in refinements of accounting technique which will make significant information more readily available and more reliable.

Cost relatives may supplement unit costs. Where costs are subject to fluctuations that prevent their statement as specific sums, there is the possibility of expressing expenditures for specific purposes as a percentage of other data. Thus it is appropriate and helpful to express engineering expenditures as a function of the amount of new construction, maintenance in relation to output or gross sales, and depreciation as a percentage of the cost of depreciable property. Relatively limited investigations of the characteristics of particular utilities suffice to reveal ratios which are standard for a particular class of utilities, or for a single company, if peculiar circumstances invalidate comparisons with other similar utilities.

Another device by which the commission may heighten the rational element in judging the expenses of utility companies is the preparation of *comparative studies* of the expenditures of different companies. Even for a single company it may be significant to compare the expenditures of one period with those of another. This form of analysis may follow two procedures—ratio analysis and trend analysis. *Ratio analysis* consists in determining the ratio or percentage relation between specific elements of cost. Where the ratios thus calculated do

not appear to have especial validity *per se*, there is the possibility that the extension of the analysis over several years may reveal changes or trends that will focus attention on significant and critical facts.

The process of *trend analysis* may involve nothing more than the selection of one year as the base year, and the statement of all subsequent expenses as index numbers, with each expense item in the base year equal to 100. The trend method of analysis reveals not only the direction of change for each item of expense, but it also affords an easily comprehensible measure of the amount of the change. In addition, it makes possible a ready comparison between related items of expense and their relative rates of change.

The discussion may be made specific by reference to a study of the expense ratios of electric utilities for the years 1936, 1937, and 1938 by the Wisconsin Public Service Commission's Rates and Research Department.¹³ This analysis is concerned with customer costs for Class A and Class B electric utilities. In addition to the data for the private utilities, averages are presented for the municipal utilities. The basis of the study is total costs, exclusive of the expenses of production and transmission. It may be noted in passing that the analysis includes the more controversial elements of cost, particularly the costs of distribution, and that reasonably adequate data are generally available with respect to the normal costs of production and transmission.

Table 42 presents the general picture of the unit expenditures involved in serving the average customer after the electric energy has left the low side of the substation; the costs of production and transmission are not included. If the weighted average for all Class A and B utilities be accepted as the measure, then the costs of distribution account for 38 per cent of this total; administrative and general costs, for 31 per cent; customers' accounting and collecting, for 17 per cent; and sales promotion, for 14 per cent. In 1938 the average cost for the municipal utilities, \$9.90, was less than 70 per cent of the \$14.28 average per customer costs for private utilities. While comparisons between different companies are of limited significance, it may be noted that among the private companies the Madison Gas and Electric Company had the lowest per customer average, \$8.82, a significantly lower average than that of the municipal utilities. The North American Company's subsidiaries were lower than the average in costs; the Middle West Corporation's subsidiaries were very close to the average; while the subsidiaries of the Standard Gas and Electric Company were, with one exception, appreciably higher than the average. A study of the cost trends for the different companies is significant: the average trend for the three-year period was upward, but a few of the companies were able to effect reductions.

Table 43 presents the costs of distribution per customer, the largest group of costs in the rendition of electric service. These costs constitute a larger percentage of cost for the municipal utilities than for the private companies. The trend of such costs has been distinctly upward over the three-year period, the average advance being 18 per cent for the private utilities and nearly 11 per cent for the municipal utilities. Referring again to the average distribution

¹³ Wisconsin, Public Service Commission, *Electric Utilities' Expense Ratio* (Rates and Research Department, Departmental Bulletin No. 14-A, 7th edition).

TABLE

THREE-YEAR COMPARISON OF EXPENSE PER CUSTOMER
1936-1938

Company	Class of Utility	Distribution ²			Customers' Accounting ² and Collecting		
		1936	1937	1938	1936	1937	1938
<i>North American Co.</i>							
Wisconsin Elec. Pr. Co.	A	\$4.66	\$5.14	\$5.41	\$2.14	\$2.19	\$2.26
Wisconsin Gas & Elec. Co.	A	4.63	5.08	5.89	2.26	2.07	2.41
Wis. Mich. Power Co.	A	3.15	3.14	4.03	2.52	2.19	2.04
Weighted Average		\$4.55	\$4.99	\$5.40	\$2.18	\$2.17	\$2.27
<i>Standard Gas and Electric Co.</i>							
Men. & Mar. Lt. & Tr. Co.	A	\$3.86	\$3.72	\$3.86	\$2.10	\$2.24	\$2.15
Wis. Public Serv. Corp.	A	5.01	5.56	6.04	2.26	2.26	2.14
Northern States Pr. Co.	A	5.47	5.97	6.53	3.30	3.05	3.04
Mid. Public Serv. Co.	B	7.41	7.76	7.57	5.95	5.05	4.82
Interstate Lt. & Pr. Co.	A	7.15	6.19	7.37	3.34	2.77	2.98
Weighted Average		\$5.20	\$5.67	\$6.18	\$2.67	\$2.56	\$2.49
<i>Middle West Corp.</i>							
Lake Superior Dist. Pr. Co.	A	\$3.36	\$4.08	\$4.07	\$4.16	\$4.43	\$4.12
Wisconsin Pr. & Lt. Co.	A	3.99	4.20	4.72	2.97	2.81	2.82
Weighted Average		\$3.91	\$4.18	\$4.65	\$3.12	\$3.00	\$2.98
<i>Other Private Companies</i>							
Madison Gas & El. Co.	A	\$3.31	\$3.59	\$4.06	\$1.59	\$1.59	\$1.74
Superior Water Lt. & Pr. Co.	A	4.24	4.97	5.46	1.78	1.93	2.55
Wis. Hydro El. Co.	A	4.81	4.16	5.36	3.89	3.46	3.30
Miss. Val. Publ. Serv. Co.	A	7.91	5.10	5.93	2.96	3.06	2.72
Interstate Power Co.	A	5.07	4.05	3.80	3.46	3.82	3.37
Willow River Power Co.	B	2.42	1.20	2.11	2.56	2.76	3.13
Nekoosa-Edw. Lt. & Pr. Co.	B	5.46	7.40	5.75	1.98	1.74	2.25
Northwestern Wis. El. Co.	B	4.35	5.26	4.08	3.85	4.17	3.71
Wis. Central Util. Co.	B	3.12	3.85	4.24	3.87	4.52	3.83
Weighted Average (Excl. Mad. & Sup. Co.'s.)		\$4.62	\$4.12	\$4.45	\$3.47	\$3.52	\$3.30
<i>All Private Companies</i>							
Weighted Average		\$4.51	\$4.90	\$5.34	\$2.47	\$2.42	\$2.47
Median		4.63	4.97	5.36	2.96	2.77	2.82
<i>Municipal Utilities</i>							
Weighted Average		\$4.35	\$4.41	\$4.81	\$1.54	\$1.61	\$1.95
Median		4.54	4.33	4.66	1.32	1.32	1.72
<i>All Class A and Class B Utilities</i>							
Weighted Average		\$4.50	\$4.86	\$5.30	\$2.40	\$2.37	\$2.43
Median		4.58	4.45	4.73	2.04	1.80	2.07

† Utilities which are largely or entirely wholesaling in character are excluded. Ratios are based upon Wisconsin operations only.

¹ Customer data used exclude other electric utilities, street lighting customers, and other governmental customers receiving service under separate rate classifications.

² Partially estimated. All items charged to utilization expense in 1936 and 1937 are included in distribution expense in order to make comparable with 1938. The estimated portion of conversion and storage expense reported in 1936 and 1937 chargeable to distribution expense under the 1938 uniform system of accounts was also included. This estimate was based upon the distribution in 1938 of items formerly included in conversion and storage.

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RATIOS CLASS A AND CLASS B PRIVATE ELECTRIC UTILITIES †

Expense per Average Customer ¹								
Sales Promotion			Administrative and General			Total (Excluding Production & Transmission)		
1936	1937	1938	1936	1937	1938	1936	1937	1938
\$1.90	\$1.95	\$2.19	\$2.92	\$2.92	\$3.20	\$11.62	\$12.20	\$13.06
1.04	1.62	1.19	3.47	2.91	3.53	11.40	11.68	13.02
1.10	1.48	1.63	3.43	3.61	4.05	10.20	10.42	11.75
\$1.69	\$1.86	\$1.96	\$3.05	\$2.97	\$3.32	\$11.47	\$11.99	\$12.95
\$1.16	\$1.33	\$1.32	\$4.11	\$4.44	\$5.09	\$11.23	\$11.73	\$12.42
3.15	3.22	2.64	5.83	6.01	5.99	16.25	17.05	16.81
3.25	4.28	3.52	6.19	6.47	7.94	18.21	19.77	21.03
3.73	4.59	4.00	6.65	6.23	6.14	23.74	23.63	22.53
5.05	4.32	4.31	10.69	10.45	16.62	26.23	23.73	31.28
\$3.16	\$3.56	\$2.95	\$6.01	\$6.22	\$6.84	\$17.04	\$18.01	\$18.46
\$1.65	\$2.34	\$1.61	\$7.56	\$5.56	\$6.40	\$16.73	\$16.41	\$16.20
2.05	2.43	1.77	5.51	4.93	4.57	14.52	14.37	13.88
\$2.00	\$2.42	\$1.75	\$5.76	\$5.01	\$4.79	\$14.79	\$14.61	\$14.17
\$.86	\$.86	\$.80	\$2.89	\$2.66	\$2.22	\$ 8.65	\$ 8.70	\$ 8.82
2.13	2.08	2.47	4.07	4.50	4.72	12.22	13.48	15.20
1.08	.84	.91	9.31	8.40	7.57	19.09	16.86	17.14
1.11	1.53	1.28	4.37	4.91	5.06	16.35	14.60	14.99
2.34	1.62	.98	4.67	5.36	4.94	15.54	14.85	13.09
.12	.27	.20	10.23	10.49	8.67	15.33	14.72	14.11
4	4	.47	6.18	6.22	6.10	13.62	15.36	14.57
4	1.01	1.30	6.59	6.36	6.58	14.79	16.80	15.67
.88	.98	.79	4.81	5.85	6.30	12.68	15.20	15.16
\$1.08	\$.99	\$.88	\$7.14	\$7.12	\$6.60	\$16.31	\$15.75	\$15.23
\$2.00	\$2.25	\$2.06	\$4.28	\$4.15	\$4.41	\$13.26	\$13.72	\$14.28
1.16	1.62	1.32	5.51	5.56	5.99	14.79	14.85	14.99
\$.18	\$.11	\$.17	\$3.68	\$3.91	\$2.97	\$ 9.75	\$10.04	\$ 9.90
—	—	.02	3.12	3.33	2.97	9.66	9.03	9.33
\$1.87	\$2.10	\$1.92	\$4.24	\$4.14	\$4.31	\$13.01	\$13.47	\$13.96
.21	.22	.38	4.09	3.95	3.50	11.03	11.36	11.51

¹ Includes uncollectible accounts in all years.⁴ These companies reported no sales promotion during these years because they were then Class C companies and the classification of accounts for such companies does not require that such expenses be shown separately. It is probable that sales promotion expenses are included in general expense for these years.* Wisconsin, Public Service Commission, *Electric Utilities' Expense Ratio* (Rates and Research Department, Departmental Bulletin No. 14-A, 7th ed.) Table 1.

TABLE
DISTRIBUTION EXPENSE PER CUSTOMER
1938

Company	Class of Utility	Operation				
		Super- vision	Office, Stations, Lanes	Meters	Services on Customers' Premises	Street Lighting Equipment
<i>North American Co.</i>						
Wis. El. Pr. Co.	A	\$.28	\$1.48	\$.61	\$1.13	\$.07
Wis. Gas and El. Co.	A	.23	1.26	.48	.64	.19
Wis. Mich. Pr. Co.	A	.21	.92	.42	.32	.25
Weighted Average		<u>\$.26</u>	<u>\$1.40</u>	<u>\$.57</u>	<u>\$.98</u>	<u>\$.11</u>
<i>Standard Gas & El. Co.</i>						
Men. & Mar. Lt. & Tr. Co.	A	\$.33	\$.48	\$.85	\$.55	\$.40
Wis. Pub. Serv. Corp.	A	.53	1.33	.89	.71	.20
Northern States Pr. Co.	A	.87	1.79	1.14	.78	.40
Midland Pub. Serv. Co.	B	1.90	1.19	1.13	.82	.45
Interstate Lt. & Pr. Co.	A	1.54	2.76	.53	.68	.21
Weighted Average		<u>\$.67</u>	<u>\$1.49</u>	<u>\$.97</u>	<u>\$.73</u>	<u>\$.28</u>
<i>Middle West Corp.</i>						
Lake Sup. Dist. Pr. Co.	A	\$.08	\$.72	\$.54	\$.46	\$.32
Wis. Pr. & Lt. Co.	A	.30	1.00	.62	.44	.28
Weighted Average		<u>\$.28</u>	<u>\$.96</u>	<u>\$.61</u>	<u>\$.44</u>	<u>\$.29</u>
<i>Other Private Companies</i>						
Madison Gas & El. Co.	A	\$.47	\$.69	\$.45	\$1.40	\$.30
Sup. Wtr. Lt. & Pr. Co.	A	.42	1.89	.90	.95	.16
Wis. Hydro El. Co.	A	.86	1.16	.62	.38	.05
Miss. Val. Pub. Serv. Co.	A	.63	1.81	.64	.23	.34
Interstate Power Co.	A	.29	1.13	.44	.31	.28
Willow River Power Co.	B	.09	.08	.14	—	.01
Nekoosa-Edw. Lt. & Pr. Co.	B	.59	1.76	.24	.04	.36
Northwestern Wis. El. Co.	B	.29	.81	.55	.59	.23
Wis. Central Ut. Co.	B	.41	1.56	.61	.29	.28
Weighted Average (Excl. Mad. & Sup. Co.'s)		<u>\$.51</u>	<u>\$1.11</u>	<u>\$.50</u>	<u>\$.31</u>	<u>\$.17</u>
<i>All Private Companies</i>						
Weighted Average		<u>\$.37</u>	<u>\$1.31</u>	<u>\$.66</u>	<u>\$.82</u>	<u>\$.19</u>
Median		.41	1.19	.61	.55	.28
<i>Municipal Utilities</i>						
Weighted Average		.29	1.69	.48	.35	.26
Median		.19	1.89	.25	.16	.25
<i>All Class A and Class B Utilities</i>						
Weighted Average		.36	1.34	.64	.79	.19
Median		.29	1.45	.47	.33	.27

() Denote red figures.

† Utilities which are largely or entirely wholesaling in character are excluded. Ratios are based upon Wisconsin operations only.

costs for all Class A and Class B utilities, it appears operation costs are approximately 63 per cent of these costs; maintenance, approximately 37 per cent; and rents and joint expenses, less than 1 per cent of the total. In both operation costs and maintenance costs, the largest single expense is for "Office, Sta-

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A AND B PRIVATE ELECTRIC UTILITIES †

*Distribution Expense per Average Customer*¹

Total	Maintenance				Total	Rents, Joint Expenses	Total Distribution
	Super- vision	Stations, Lines, Meters	Property on Customers' Premises	Street Lighting Equipment			
\$3.57	\$.15	\$1.59	\$ —	\$.11	\$1.85	\$ (.01)	\$5.41
2.80	.15	2.78	—	.15	3.08	.01	5.89
2.12	.09	1.70	.01	.08	1.88	.03	4.03
\$3.32	\$.15	\$1.82	\$ —	\$.11	\$2.08	\$ —	\$5.40
\$2.61	\$.15	\$.97	\$ —	\$.11	\$1.23	\$.02	\$3.86
3.66	.35	1.76	—	.22	2.33	.05	6.04
4.98	.25	.95	—	.11	1.31	.24	6.53
5.49	.30	1.49	—	.15	1.94	.14	7.57
5.72	.30	1.22	—	.03	1.55	.10	7.37
\$4.13	\$.31	\$1.45	—	\$.17	\$1.93	\$.12	\$6.18
\$2.12	\$.04	\$1.60	\$.01	\$.20	\$1.85	\$.10	\$4.07
2.64	.13	1.79	—	.12	2.04	.04	4.72
\$2.58	\$.12	\$1.77	\$ —	\$.13	\$2.02	\$.05	\$4.65
\$3.31	\$.03	\$.66	\$ —	\$.02	\$.71	\$.04	\$4.06
4.32	.22	.71	—	.10	1.03	.11	5.46
3.07	—	2.14	—	.07	2.21	.08	5.36
3.65	.19	1.87	—	.21	2.27	.01	5.93
2.45	.03	1.02	—	.10	1.15	.20	3.80
.32	.01	1.70	—	.08	1.79	—	2.11
2.99	—	2.65	—	.11	2.76	—	5.75
2.47	.12	1.32	.01	.14	1.59	.02	4.08
3.15	.23	.64	.01	.05	.93	.16	4.24
\$2.60	\$.05	\$1.61	\$ —	\$.10	\$1.76	\$.09	\$4.45
\$3.34	\$.17	\$1.67	\$ —	\$.12	\$1.96	\$.04	\$5.34
3.07	.15	1.59	—	.11	1.85	.04	5.36
3.07	.05	1.32	.03	.32	1.72	.02	4.81
3.03	—	1.26	—	.26	1.62	—	4.66
3.32	.16	1.64	—	.14	1.94	.04	5.30
3.05	.03	1.34	—	.15	1.69	—	4.73

¹ Customer data used exclude other utilities, street lighting customers, and other governmental customers receiving service under separate rate classifications.

* Source: Wisconsin Public Service Commission, *Electric Utilities' Expense Ratio* (Rates and Research Department, Departmental Bulletin No. 14-A, 7th ed.) Table 2.

riations, Lines," all of the other costs of distribution constituting less than half of the total. If the companies' own allocations of their costs be accepted, there appear to be wide variations between different companies in the total costs of distribution and in the expenditures for particular items. Differences of such

magnitude suggest that there are differences in the methods of allocation followed by the different utilities, and that there should be further inquiry into the sources and causes of these differences. Although services on customers' premises average much higher for the private companies than for municipal enterprises, a substantial proportion of these costs are recovered through special charges.

Other categories of cost are subject to similarly detailed analysis.

The above data from the reports of the Wisconsin Public Service Commission are not presented with the idea that the specific figures are of particular importance. Their present function is to illustrate the possibilities of a relatively simple analysis of the expense reports which the utilities make to the regulatory commissions, to indicate the multiplicity of questions that are suggested by the ratio and trend methods of analysis, and convey a general picture of the relative importance of different categories of expense.

The comparison method can be applied not only to the reports of the same company for a succession of years, but also to the experience of different companies. Comparisons between companies are always to be regarded critically, for different companies may be subject to such divergent conditions as to make direct comparisons of limited significance. Yet such cost studies as have been carried out reveal that the differences between companies are less than they have usually been thought.¹⁴ A most promising and significant development is the work of the Federal Power Commission in the preparation of cost standards.¹⁵

A qualification or warning must be recorded with respect to the results of any of the methods available for the analysis of the expenses of utility companies. None yields answers that are final, and none is a substitute for a critical analysis and interpretation of accounting and statistical data. Their purpose is to raise questions, to reveal the direction which further investigations should take, to call attention to doubtful and questionable items, and to provide the analyst with an orderly procedure for the conduct of his examination.

THE ESTIMATE OF OPERATING EXPENSES. The ascertainment of the appropriate allowance for operating expenses requires a forecast of the utility's requirements for the future, and usually begins with a consideration of past expenses.

The ascertainment of past operating expenses presents the simpler problem. Two general questions arise: Did the utility actually incur the expenditures claimed? Were the expenditures normal and reasonable? The test of the reasonableness of operating and other expenses has been analyzed in the preceding section.

If the utility keeps its accounts according to the system prescribed by the regulatory authorities there is likely to be little disagreement as to the expenses incurred by the company. However, it is not uncommon for the probative value of expense figures for particular years to be challenged as not being rep-

¹⁴ A study of distribution costs for electric companies carried out under the direction of the Power Authority of the State of New York has revealed that the costs of distributing electricity vary principally in relation to the average consumption per customer, and that the sources of the differences in costs can usually be revealed by an analysis of the facts with respect to the particular utility. (4 *Ann. Rep. N.Y. Power Authority*, Appendix 8, 22-23 [1935].)

¹⁵ See Chapter XXIV, Sec. 5.

representative. It is, therefore, usual for the commission to seek expense figures covering a number of years, the number of years depending on the experience of the utility during the period in question. Where conditions are changing rapidly and past experience is no longer a reliable guide to the future, the commission may accept the figures for the past year, or even rely upon estimates of the current year.

Puzzling questions as to evidence and procedure are presented when the situation is admittedly abnormal. Clearly, abnormal expenses must be recognized and some provision made for them, but they cannot be allowed controlling influence in the determination of the utility's revenue requirements. It is customary to authorize the utility to amortize any unusual and non-recurring expenditures—if they are of serious proportions—over a period of years rather than to charge them against the income of a single year.

4. THE TREATMENT OF PARTICULAR EXPENSES

CAPITAL EXPENDITURES VERSUS OPERATING EXPENSES. The discussion of the principles of accounting regulation has already called attention to the importance of the distinction between operating expenses and capital expenditures. In principle, the distinction is clear: capital expenditures are those that provide a net addition to the capital assets with which the company carries on its operations; while operating expenses are those made to secure goods and services which do not last beyond the current accounting period. In those instances where operating expenses are incurred for commodities or services that will be available beyond the end of the accounting period, the expenditures are classified with the assets as, for example, "prepayments."

In practice, difficulty may arise with respect to particular expenditures, as for parts and materials, where it is possible that the same items may be used either for replacements, in which case the charge is an operating expense, or for new construction, in which event the expenditure should be treated as a capital expense. Similar questions arise with respect to the allocation of labor expense: the same construction workers may spend a part of their day in repair work and the rest of the day may be devoted to extensions. In most instances, it is impossible for the commission to verify in detail the allocations made by the company; hence, it is important that the accounting system be carefully devised to supply the maximum of specific information.

DEPRECIATION. The problems of depreciation have already been considered in relation to the accounting practices of utilities and to the deduction of accrued depreciation from gross value in arriving at the rate base. The treatment of current depreciation in the regulation of utility income was one of the earliest questions to arise. The analysis of the problems associated with depreciation as an operating expense will involve a consideration of the nature of the expense, the right of the utility to recover for this expense, the necessity and significance of commission control over depreciation charges, and the standards which have been developed for this phase of regulation.

The nature of depreciation expense. The cost of providing for the retirement of assets having limited lives is an inescapable cost of operation; the

cost is real whether it results directly from the utilization of those assets in the rendition of service or indirectly from having the property ready and available to meet the public demands. Because the expenditure for depreciation does not have to be made with the inexorable regularity with which pay rolls must be met or the fuel supply replenished, it is critically important that the accounts of the utility should recognize that accruing depreciation is an operating expense of each and every accounting period, and should provide for the collection of this cost by appropriate charges to operating expenses.

Those companies which prefer to substitute retirement-expense or renewal accounting for depreciation accounting would not recognize accruing depreciation as an operating expense. The retirement-expense method (or the renewal method, if that is used) provides for replacements when and if they are made—that is, the operating expense is acknowledged only when the management either votes to make replacements or to make an appropriation to an equalization reserve, the expense or appropriation then being charged against current earnings. The theoretical and practical weakness of these two methods of caring for the costs of depreciation have been detailed in the consideration of depreciation accounting,¹⁶ and utility commissions are increasingly requiring utilities to include accruing depreciation with the other current costs of operation.

The right of the utility to be reimbursed for depreciation. The right of the utility to include provision for current depreciation in its operating expenses was not at first recognized.¹⁷ However, since the 1909 decision in the *Knoxville Water Company* case, the Supreme Court has consistently upheld the right of utilities to include in operating expenses the costs of the ultimate replacement of depreciable property:

“... Before coming to the question of profit at all the company is entitled to earn a sufficient sum annually to provide not only for current repairs but for making good the depreciation and replacing the parts of the property when they come to the end of their life.”¹⁸

The importance of commission control over depreciation expense. The importance of depreciation varies with the different kinds of utilities. In those undertakings where technical changes are frequent and unforeseen, the provision must be very liberal; other utilities, such as the water companies, whose capital facilities are subject primarily to physical depreciation from use and exposure to the elements, experience only moderate depreciation costs. The composite statistics compiled by the Federal Power Commission

¹⁶ Chapter VIII.

¹⁷ In the *San Diego Land & Town Co. v. Jasper*, 189 U.S. 439 (1903), the Supreme Court, speaking through Mr. Justice Holmes, was apparently not persuaded of the necessity of an allowance for annual depreciation:

“We will say a word about the opposite contention of the appellant, that there should have been allowance for depreciation over and above the allowance for repairs. From a constitutional point of view we see no sufficient evidence that the allowance for six per cent on the value set by the supervisors, in addition to what was allowed for repairs, is confiscatory.” (P. 446.)

And even as recently as 1933, the Supreme Court of Ohio was unable to find that an allowance for the depletion of gas wells was properly a depreciation charge within the meaning of the Ohio statutes. (127 Ohio St. 109, 134 [1933].) On appeal, the Supreme Court reversed the Ohio court. (*Columbus G. & F. Co. v. Comm.*, 292 U.S. 398, 404-405 [1934].)

¹⁸ 212 U.S. 1, 13 (1909).

show that the overall average for depreciation expense for the Class A and Class B electric utilities amounts to over 9 per cent per year.¹⁹

It is one of the objectives of depreciation control to safeguard the long-run interest of the consuming public in adequate service at reasonable rates. If insufficient provision is made for current depreciation, the resulting impairment of the utility's credit may make the financing of replacements impossible, so that the public suffers a deterioration in the quality and adequacy of service. If replacements are financed through new security issues rather than from accumulated reserves, there will arise a disparity between the investment in currently used assets and total capitalization. And clearly the consumers may be injured if their company makes excessive provision for depreciation.

Recognition of the importance of commission regulation of the charges for current depreciation has only recently come to the fore. Inconsistencies between companies' claims for current depreciation and their assertions with respect to the amount of accrued depreciation existing in their properties, the significant proportion of operating expenses represented by depreciation appropriations, and the significance of operating expenses in the establishment of rates and charges, have all combined to focus increasing attention on the problem.²⁰

Standards for control over depreciation expense. The federal commissions and the more progressive state regulatory bodies now prescribe specific rates of depreciation for each class of depreciable assets, and the utilities are required to set up subdivisions of their depreciation account to accumulate separately the reserve for each category of property. In the establishment of depreciation rates, commissions naturally make the greatest possible use of the experience which the companies have had with each class of property. The usual procedure is for the commission to order utilities subject to its jurisdiction to report the depreciation rates which are being charged for each class of property; the commission's order may prescribe these same rates or it may prescribe other rates that appear to be more accurate. Thereafter the company may charge only those rates fixed by the commission's order.

The ultimate test of the accuracy of the commissions' orders with respect to depreciation accounting is to be found in the retirement experience of the utilities. By establishing specific rates for particular groups of assets, the accuracy of the commission's orders can be promptly tested and in the light

¹⁹ Federal Power Commission, *Statistics of Electric Utilities in the United States, 1937*, Vol. I, p. iv. See Table 17; see also Table 41.

²⁰ This issue was critical in the Supreme Court's consideration of *Lindheimer v. Illinois Bell Telephone Company*, and the opinion notes the serious injury to consumers implicit in the absence of commission regulation over depreciation expense charges:

"In the light of the evidence as to the expenditures for current maintenance and the proved condition of the property—in the face of the disparity between the actual extent of depreciation, as ascertained according to the comprehensive standards used by the Company's witnesses, and the amount of the depreciation reserve—it cannot be said that the Company has established that the reserve merely represents the consumption of capital in the service rendered. Rather it appears that the depreciation reserve to a large extent represents provision for capital additions, over and above the amount required to cover capital consumption. This excess in the balance of the reserve account has been built up by excessive annual allowances for depreciation charged to operating expenses." (292 U.S. 151, 174-175 [1934].)

of experience the rates of depreciation can be modified to fit the experience of the particular utility.

Maintenance versus depreciation. One of the dangers to consumers in the depreciation accounting of regulated enterprises is the possibility of duplication in maintenance and depreciation charges. Certainly one of the most difficult problems for regulatory authorities and management is to distinguish between repairs and the replacement of minor parts which are properly charged to *maintenance* and those unusual expenditures and major replacements that should be charged to *depreciation*.²¹ Yet this distinction is of great practical importance. Only if the utility operates without the accumulation of a depreciation reserve is it legitimate for replacements to be cared for by direct charges to the expense account, and then the account should be clearly denominated maintenance and replacement expense. If a company using depreciation accounting is permitted to provide for replacements through charges to maintenance instead of charging retirements to its depreciation reserve, the funds accumulated through its depreciation accounting will become a free surplus and consumers will be charged twice for the depreciation of the same property.

SALARIES AND WAGES. The attainment of economy and efficiency in operations depends on the competence of both management and labor, and in a competitive world utilities must pay salaries and wages commensurate with the quality of the employees sought.

Salary payments to officers have frequently been challenged by the commissions. It is not a commission function to prescribe the duties of officers and the compensation to be paid to them; but it is the commission's responsibility to scrutinize all expenses of the company, including payments for officers' salaries. Where it is established that salaries are unreasonable in amount, it is customary for the commission to permit the inclusion in operating expenses of only such sums as are fair and reasonable, considering the gross operating revenue, the total of operating expenses, and the amount and quality of the work performed by the officers of the utility.²² It is to be expected that criticism should be directed at the payment of salaries to the common officers of holding and operating companies, and that in such circumstances a heavy burden of proof should rest on the company to justify the payment.²³ However, regulatory agencies have been equally critical of the payments made to officers who are also important stockholders, lest concealed profits accrue in the form of excessive salary payments.²⁴

²¹ Or to retirements or renewals, if one of these methods is substituted for depreciation accounting.

²² *Cheltenham & A. Sewerage Co. v. Public Service Comm.*, 15 P.U.R. (N.S.) 99, 114, 122 Pa. Super. Ct. 252, 186 Atl. 149 (1936); *Re Great Western Power Co.*, P.U.R. 1923C, 545, 569 (Cal., 1923); *Re Home Teleph. Co.*, P.U.R. 1924A, 253, 257 (Mo. 1923); *Re Payne County Pipe Line Co.*, P.U.R. 1924E, 481 (Okla., 1924); *Public Service Commission v. Northwestern Improv. Co.*, P.U.R. 1926D, 305, 313 (Mont., 1926); *Re Lone Star Gas Co.*, P.U.R. 1933C, 147 (Okla., 1933); *Re Pacific Tel. & Tel. Co.*, 2 P.U.R. (N.S.) 384 (Or., 1933).

²³ *Re Coos & Curry Teleph. Co.*, P.U.R., 1924E, 344 (Or., 1924); *Re Ohio Central Teleph. Corp.*, P.U.R. 1932D, 439 (Ohio, 1931).

²⁴ *Re Cayuga Omnibus Corp.*, P.U.R., 1931C, 238, 242 (N.Y., 1931); *Consolidated Teleph. Co. v. Georgia Pub. Service Commission*, 2 P.U.R. (N.S.) 454, 455 (N.D. Ga., 1934).

Few regulatory problems are presented by the wage payments of utility companies, or in fact, by salary payments to officials other than those higher officials who are influential in the determination of the company's policies. While the commissions seldom criticize the wage scales of utilities, if the issue arises the principle of reasonableness must apply. Utility companies are expected to be able to effect economies in wage payments during periods of depression when the volume of business and the amount of work declines. Increases in wages will ordinarily be accepted as justifying a demand for increased revenues, but the amount of the utility's revenues will not automatically be increased to compensate fully for wage increases. Where utilities adopt the policy of paying bonuses to their employees, commissions are divided as to the proper policy; presumably such bonuses will be recognized as a legitimate part of the labor cost, but where the bonus payments are segregated for the purchase of the stock of the utility or an affiliate, the authorities are inclined to be critical.

COSTS OF REGULATION. At different times and in different jurisdictions, the costs of regulation have been variously imposed on the investors, the taxpayers, and the consumers. The critics of present regulatory practices, conscious of the costs of regulation and the advantages that sometimes accrue to the companies from obstructing or delaying the prompt functioning of regulation, have been especially concerned by the frequency and success with which the corporations appeal to the courts, with the multiplication of the costs of regulation and the nullification of commission control by litigation. In particular, the ability of the company to pass the costs of litigation on to the consumer has been cited as an encouragement to unjustifiable and obstructive appeals with the purpose of delaying and defeating effective control. It is understandable that the public should have some misgivings about paying the costs of regulation, both as taxpayers supporting governmental agencies and as consumers whose rates cover the costs occasioned by the utility's opposition.

The costs of regulation fall into two categories: there are the normal costs of regulation, including perhaps the costs incurred by the commissions and assessed against the companies, and there are the unusual costs of prolonged rate investigations and appeals to the courts. The former category of cost, the assessments which the companies pay to cover the expenses of the regulatory agency, are normal and recurring costs and would naturally be included in the operating expenses of the company.²⁵

The unusual costs consequent upon challenges to the commission's orders and other litigation are not always accepted as normal costs to be included among the operating expenses. Their treatment differs depending upon the question to be decided: if the court is testing the confiscatory character of the rates prescribed by a commission, the expenses incurred by the company in that proceeding may not be included in operating expenses for the purpose, and with the effect, of making confiscatory a rate which would otherwise be adequate; but if the commission is prescribing the rates to be observed by

²⁵ *Bronx G. & E. Co. v. Maltbie*, 268 N.Y. 278, 290, 197 N.E. 281 (1935).

the company for the future, all costs, including the costs of litigation in the particular proceeding, must be provided for in the revenue derived from the consuming public.²⁶

Are there any circumstances under which the utility may be properly refused permission to include regulatory expense in operating costs? It has sometimes been suggested that the company should not be permitted to claim the costs of opposing the reduction of a rate which is finally established to be excessive, the theory being that the company is legally obligated to charge reasonable rates and that the public suffers a double damage if it not only pays an excessive rate but is also compelled to repay the sums expended by the utility in an effort to continue the improper rate.²⁷ The Supreme Court has definitely ruled that the company shall be allowed the costs of presenting its case before the commission,²⁸ but the question is still unanswered as to the status of utility expenditures in carrying appeals to the courts, though the implications of the *West Ohio Gas* case suggest that such expenses should also be allowed by the commission. The doctrine of the *Driscoll* case may be accepted as fair to company and consumer; the utility should be allowed to recover the normal costs of proceedings before the commission. But the treatment of the costs of appeal and litigation is somewhat more complicated. If the company is right in its contention that the commission has overreached its authority and established rates which are confiscatory, the company should be permitted to include its expenditures among those to be recovered from the ratepayers. But if the rate litigation is unsuccessful in disturbing the finding and order of the commission, the company should not be permitted to impose the cost of its error, however sincerely made, upon consumers. If the costs of rate proceedings or litigation are unnecessary or excessive, there would appear to be no doubt that the utility should be estopped from shifting such expenditures to consumers.²⁹

Where a decision has been reached that the costs of regulation or litigation should be paid by consumers, three alternative procedures are available. The costs of regulation could be charged to capital, but this arrangement would result in a gradual inflation of the capital accounts without any corresponding addition to the earning assets of the utility. Only where the costs of litigation are incurred in the period prior to the beginning of operations is there any color of a justification for their inclusion as a capital overhead. The second alternative is to charge regulatory expense directly to the operating costs of the period in which they are incurred. Although direct charges

²⁶ *West Ohio Gas Co. v. Comm.* (No. 1), 294 U.S. 63, 74 (1935). See also *Denver Union Stock Yard Co. v. United States*, P.U.R. 1932C, 225, 57 F. (2d) 735 (D. Colo., 1932); *Oregon-Washington Water Service Co. v. Department of Public Works*, 11 P.U.R. (N.S.) 478, 184 Wash. 451, 51 P. (2d) 610 (Wash., 1935); *Re Wisconsin Tel. Co.*, 13 P.U.R. (N.S.) 224 (Wis., 1936).

²⁷ *Presque Isle Water Co. v. Itself*, 18 P.U.R. (N.S.) 385, 399 (Me., 1937); *Re Yonkers Electric Light & P. Co.*, 6 P.U.R. (N.S.) 132, 153 (N.Y., 1934); *East Ohio Gas Co. v. Cleveland*, 4 P.U.R. (N.S.) 433, 477 (Ohio, 1934).

²⁸ *Driscoll v. Edison Co.*, 307 U.S. 104, 120-121 (1939).

²⁹ *National City v. Sweetwater Water Corp.*, 3 P.U.R. (N.S.) 405 (Cal., 1933); *Scranton-Spring Brook Water Service Co. v. Comm.*, 119 Pa. Super. Ct. 117, 181 Ad. 77 (1935); *Public Utility Comm. v. Edison L. & P. Co.*, 19 P.U.R. (N.S.) 474, 475 (Pa., 1937); *Dept. of Public Service v. Grays Harbor R. & Light Co.*, 12 P.U.R. (N.S.) 178, 205 (Wash., 1936).

to operating expenses are justifiable for those expenditures which are normal and recurring, this procedure is dubious where the regulatory costs are unusual and infrequent and of considerable magnitude. The third procedure—amortization through charges to operating expenses over a reasonable period of time—has had the approval of the Supreme Court³⁰ and has been adopted by many of the commissions.

TAXES. The search for additional revenues by all departments of government, combined with the relative prosperity of utility corporations in a period when other businesses were prostrate, and aided by the widespread criticism of the industry, has led to the imposition of heavier taxes on utilities. The increasing tax burden has come only in part from increases in existing tax rates; a large part has been the result of new taxes devised to meet emergency demands for revenue. The discussion of the problems raised by the taxation of utilities, in relation to the appropriate expense allowances for testing the reasonable or confiscatory character of utility rates, involves two distinct matters: the theory and incidence of utility taxation, and the principles which are determinative of the treatment of each particular tax.

All taxation of utility corporations tends to fall on the consumers. This is a generalization to which certain formal exceptions must be noted, but as a matter of principle it may be assumed, until demonstrated to the contrary, that consumers pay utility taxes. That the consumer pays utility taxes is readily appreciated when tax payments are included with the operating expenses of the utility. But the consumer pays utility taxes indirectly when the tax payment is treated as an appropriation from net income, for the net income which remains after the payment of the tax must suffice to attract additional capital to utilities in competition with other investment opportunities. There are two general situations in which the final incidence of taxation is on the utility corporation or its investors, rather than on the consumers: where the utility is no longer expanding (or where the expansion is being financed through the reinvestment of earnings alone) and hence has no need to seek funds in the investment market, the tax may reduce the net income below the level of a fair return without at the same time increasing the cost of capital in such a manner as to require consumers to pay a higher rate of return; or if the utility has been enjoying an excessive return, the deduction of the tax payment from net earnings may still leave investors a return which will suffice to attract capital. Those who contend for lower utility rates and at the same time seek to increase the tax burden on utility corporations must assume that excessive earnings will persist, and whether their double attack on the "utility monopoly" can succeed in serving the consumer and taxpayer must depend upon the facts of the particular situation. When such taxation of public utilities wins popular support, assuming that the public understands the situation, it indicates a disbelief in the capacity of regulation to assure reasonable rates to consumers.

If the incidence of utility taxes is usually on the consumer, the wisdom of taxing utility corporations may be queried. Should utilities be subject to any taxation, or should they be exempt from taxation in the interests of providing

³⁰ *Driscoll v. Edison Co.*, 307 U.S. 104, 121 (1939).

service at lower rates for consumers? If they should be taxed, should they be subjected to unusual tax burdens, presumably on the assumption that they serve as efficient agencies for the painless collection of taxes from all members of the community? The proposal to exempt utilities from all taxation in the interests of lower rates has little merit. The industry should be subject to neither tax discrimination nor tax favors, but should be taxed as other industries are taxed.

There are weighty objections to using the utilities as tax collectors. The general objections to tax discrimination, with its effect on consumption and production, are applicable here. In addition, there is the question of the equitable distribution of the tax burden. Even though the same total tax revenue is secured, the incidence of tax burden will be quite unfair if the taxes are collected as part of the price of the utility service. Such a distribution of the tax burden would conform to no recognized principle of taxation: certainly the costs of government are not distributed in proportion to the consumption of the utility service; the benefits which individuals derive from the operations of government bear no discernible relation to their expenditures for utility service; and such a distribution of tax burden would certainly not conform to the principle of ability to pay. Finally, the taxes would effect an undesirable curtailment in the consumption of the utility service. The convenience with which tax jurisdictions, particularly municipalities, may turn to taxation of utilities for additional revenue should never blind either public officials or consumers to the uneconomic character of such a tax system.

The status of utility taxes in rate proceedings may be illustrated by reference to the common taxes: property taxes, income and profits taxes, sales taxes, capital stock taxes, and franchise taxes.

Municipal taxation of utilities commonly assumes the form of property taxes. Aside from the difficult technical problems involved in the appraisal of the specialized equipment which makes up the capital of the utility corporation, property taxes present no unusual aspects. Such taxes are definite or at least determinate. If the utility has paid the tax or is subject to the tax in the future, the propriety of its inclusion as an expense and the amount of the allowance are not debatable.

Income and profits taxes present more perplexing problems. In general, a tax on corporate incomes is not shifted to the users of the corporation's product or service. Where either the unregulated monopolist or the competitive corporation is taxed on its net income or profits, the burden of the tax is directly and finally on the stockholders. But the stockholders of the utility have no right to an unlimited income; the rates which the utility may charge are presumably adjusted to provide only that net income which is requisite to attract and retain the necessary capital in the enterprise. As long as utilities require new capital in competition with other investments, the net earnings after all dividend payments will be the standard criterion for determining the cost of capital,³¹ and thus the final incidence of the tax is shifted from stockholders to consumers. It must, of course, be established that

³¹ *Galveston Elec. Co. v. Galveston*, 258 U.S. 388, 399-400 (1922); *Georgia Ry. & P. Co. v. Comm.*, 262 U.S. 625, 633 (1923).

the corporation has paid, or will pay, the income tax.³² Where an excess-profits tax is imposed on utility corporations, the burden usually falls on the corporation or its stockholders, with no shifting to the consumers.³³

Sales taxes have been used with respect to utilities chiefly as a result of the depression of the 1930's. Such a tax is too obviously a burden upon consumers to make it politically expedient except in emergency. The most widely known example of a sales tax on utility services was the 3 per cent federal tax on electric energy. At first, this tax was included in operating expenses, imposing the burden on the consumers directly.³⁴ But a change in the law transferred the tax from the consumers to the companies, and thereafter the regulatory authorities refused to permit the inclusion of the tax in operating expenses.³⁵

Capital-stock taxes have had a varied experience. When first imposed on utilities, such taxes were commonly treated as an operating cost.³⁶ But subsequently the federal capital-stock tax was excluded from operating expenses on the theory that the burden was intended to be on the corporation.³⁷ If any allowance is made for this tax, the amount should not exceed the proportion of the capitalization which represents investments devoted to the purely utility operations as distinguished from non-utility operations.³⁸

Franchise taxes may be levied in lieu of other taxes or in addition to them. As long as utilities are required to have franchises from state or local authorities, there will be a temptation to tax this "privilege." Any annual payment for a franchise, either in the form of a tax or a rental, is properly a part of the cost of utility operations.³⁹

DONATIONS AND CHARITABLE CONTRIBUTIONS. Utilities are extremely exposed to public criticism and they are consequently anxious to cultivate the goodwill of the communities in which they render service. Naturally, therefore, utility corporations are a ready target for those who would solicit contributions to charities and similar welfare programs. In many instances, utilities request that these contributions be recognized as legitimate costs of operation to be recovered from consumers.

What treatment shall be accorded charitable contributions in rate proceedings apparently rests with the discretion of the commission, and where a commission is disposed to permit the allowance, the courts have accepted it.⁴⁰ In

³² *State ex rel. United Teleph. Co. v. Public Service Comm.*, 336 Mo. 860, 81 S.W. (2d) 628, 631 (1935); *Re East Ohio Gas Co.*, 17 P.U.R. (N.S.) 433, 445 (Ohio, 1937).

³³ *Re Westchester Lighting Co.*, 15 P.U.R. (N.S.) 299, 316 (N.Y., 1936); *Charleston v. Public Service Comm.*, P.U.R. 1924B, 601, 638, 95 W.Va. 91, 120 S.E. 398 (1923).

³⁴ *Georgia Power & Light Co. v. Georgia Pub. Service Comm.*, 8 F. Supp. 603 (N.D. Ga., 1934); *N. Y. Edison Co. v. Maltbie*, 244 App. Div. 436, 279 N.Y. Supp. 949 (N.Y., 1935); *Long Island Lighting Co. v. Maltbie*, 249 App. Div. 918, 292 N.Y. Supp. 807 (N.Y., 1937).

³⁵ *Re Rates & Rate Structures*, 1 P.U.R. (N.S.) 113 (N.Y., 1933); *Re Rochester Gas & E. Corp.*, 4 P.U.R. (N.S.) 513, 522 (N.Y., 1933).

³⁶ *Re Southern California Teleph. Co.*, P.U.R. 1925C, 627 (Cal., 1924); *Re Philadelphia Rapid Transit Co.*, P.U.R. 1926B, 385 (Pa., 1926).

³⁷ *Re Rochester Gas & E. Corp.*, 4 P.U.R. (N.S.) 513, 522 (N.Y., 1933); *Re Brooklyn Borough Gas Co.*, 21 P.U.R. (N.S.) 353 (N.Y., 1937).

³⁸ *Re Rates & Rate Structures*, 1 P.U.R. (N.S.) 113 (N.Y., 1933).

³⁹ *Consolidated Gas Co. v. Newton*, 267 Fed. 231 (S.D. N.Y., 1920); *Re San Joaquin Light & P. Corp.*, P.U.R. 1933E, 128 (Cal., 1933).

⁴⁰ *West Ohio Gas Co. v. Comm.* (No. 1), 294 U.S. 63, 76 (1935); *Mobile Gas Co. v. Patterson*, 293 Fed. 208 (M.D. Ala., 1923).

the formulation of their policy, commissions are presented with two problems: Shall utility corporations be permitted to include charitable contributions among their operating expenses, thus shifting the burden of these contributions to their consumers? Shall utilities be permitted to make charitable contributions if they are charged against the net income available for distribution to stockholders? The overwhelming weight of commission authority is opposed to any inclusion of charitable contributions among operating expenses, and the wisdom of this preference cannot be gainsaid. If the utilities make donations and then recover these expenditures from consumers, the latter are, in effect, taxed for charities without their consent and without regard to any interest which they may have in choosing between different charities.

Regulatory authorities have not condemned donations to charities by utility enterprises, but if such contributions are made, their cost must be borne by the stockholders rather than by the consumers. Is this rule wholly satisfactory? Of course, the objection that donations provide a channel for the possible influencing of public opinion in favor of the utility applies whether the source of the funds is the consumer or the stockholder. But are there any other considerations that point conclusively to the unwisdom of this policy? Theoretically, utility companies render service at cost; hence it is presumably not possible for the utility to make contributions to welfare projects without imposing a sacrifice on stockholders. If the utility is enjoying excess income, there should be a reduction in rates to consumers before any donations are made. But if there is no excess income and if the cost of such donations is on the stockholders, is the matter of concern to the public? The answer must still be affirmative, for any encroachment on the fair return must affect adversely the investment quality of the company's securities and ultimately increase the cost of capital to the company and the cost of service to consumers. In short, it is not possible for the company to make any contribution to charity or to any other public welfare without imposing the cost of that contribution, directly or indirectly, on the ratepayers.

POLITICAL CONTRIBUTIONS AND LOBBYING EXPENDITURES. Contributions to political organizations and expenditures for lobbying activities are not only improper charges to operating expenses but they are questionable objectives for the expenditure of any utility funds. Even when they have not been outspoken in their condemnation of political expenditures, regulatory authorities have been firm in excluding such items from operating expenses when calculating the proper level of rates,⁴¹ even when the expenditures have been incurred in elections involving questions of public ownership.⁴² The attitude of the commissions toward lobbying expenditures has been less explicit, though there is a significant body of precedent against either including such expenditures among the costs of operation or permitting the utility free rein in lobbying activities.⁴³

⁴¹ *Re Western Electric Co.*, P.U.R. 1921E, 569, 576 (N.D., 1921); *Mobile Gas Co. v. Patterson*, P.U.R. 1924B, 644, 293 Fed. 208 (M.D. Ala., 1923); *Re Southern California Edison Co.*, P.U.R. 1924C, 1, 32 (Cal., 1923); *Re Mountain States Power Co.*, 3 P.U.R. (N.S.) 29 (Or., 1933).

⁴² *Union Electric Light & P. Co.*, 17 P.U.R. (N.S.) 337 (Mo., 1937); *La Junta v. Arkansas Valley R. Light & P. Co.*, P.U.R. 1916D, 1076 (Colo., 1916).

⁴³ *Re Edison Elec. Ill. Co.*, P.U.R. 1918C, 149 (Mass., 1918); *Re Lone Star Gas Co.*, P.U.R. 1933C, 1 (Okla., 1933); *Re N.Y. State Elec. & G. Corp.*, 20 P.U.R. (N.S.) 388, 393 (N.Y., 1937).

In the Public Utility Act of 1935, the federal government assumed the only sound position with respect to expenditures of this character. It is unlawful for any registered holding company or any subsidiary to make any contribution whatsoever, either directly or indirectly, to any political organization or in connection with the candidacy of any person for office.⁴⁴

It is neither possible nor desirable to exclude utility companies from presenting their case with respect to any law or pending legislation before the legislature and its committees, or before other governmental bodies; in general, the utility companies are in the best position to speak for the interests of those who have investments in these enterprises. But experience with lobbying activities in the past has demonstrated their capacity to corrupt politics and obstruct the realization of the public interest. The Securities and Exchange Commission has been charged with controlling the abuses of lobbying so far as holding companies and their subsidiaries are active. No person employed or retained by a registered holding company or by a subsidiary may appear before Congress or any federal administrative agency "unless such person shall file with the Commission in such form and detail and at such time as the Commission shall . . . prescribe . . . a statement of the subject matter in respect of which such person is retained or employed, the nature and character of such retainer or employment, and the amount of compensation received."⁴⁵ Similar principles should be adopted and enforced by the states.

ADVERTISING AND PROMOTIONAL EXPENDITURES. Utility corporations are characterized by large investments and heavy overhead costs; an increase in the volume of business, especially when it can be handled in off-peak hours without any increase in plant investment, offers opportunities for a reduction in unit costs and increased profits. It is in the interest of consumers and investors alike that utilities develop their markets intensively through expenditures for advertising and other promotional activities. Yet in the nature of things, such expenditures do not bring an immediate increase in sales and revenue, and beyond certain vague limits, such expenditures must be without benefit to company or consumers. It is, therefore, to be expected that expenditures for advertising should be carefully scrutinized by regulatory authorities.

It appears to be well established that reasonable and prudent expenditures for the promotion of the utility business may be proper charges to operating expenses.⁴⁶ The nature of the advertising must be considered. Advertising outlays to encourage increased and more intelligent use of the service, explaining the nature of the services available or the type of equipment used, or to convey other information concerned with the sale of the service or its advantages to prospective users, are legitimate expenses. But where the purpose is to justify rate increases, to present the company's side in pending litigation, or to aid in the sale of utility or holding-company securities, the expenditures have no place among the operating costs which consumers should pay.⁴⁷

⁴⁴ *Public Utility Act of 1935*, Sec. 12 (h).

⁴⁵ *Ibid.*, Sec. 12 (i).

⁴⁶ *Comm. v. Missouri Southern Pub. Service Co.*, 6 P.U.R. (N.S.) 269, 288 (Mo., 1934); *Wichita Gas Co. v. Public Service Commission*, 126 Kan. 220, 268 Pac. 111 (Kan., 1928). See also *West Ohio Gas Co. v. Comm.* (No. 1), 294 U.S. 63, 72 (1935).

⁴⁷ *Re N.Y. Tel. Co.*, P.U.R. 1923B, 545, 623 (N.Y., 1923).

The conclusion that an expenditure for advertising or promotion is reasonable and prudent is not conclusive that it should be charged directly to operating expenses. In some instances, the expenditure results in increasing the sale of the utility's service only after the lapse of a considerable period of time. In recognition of this condition, some commissions have provided that new-business expenses be allocated against the income of the future rather than against present consumers.⁴⁸

Public concern with advertising and promotional expenses is not confined simply to excluding from operating costs those expenditures which are unreasonable or unnecessary,⁴⁹ nor to the proper allocation of those expenditures whose propriety is recognized. Even when the incidence of the expenditure falls on the stockholder, there is the possibility that unwise expenditures may affect the investment character of the utility's securities and increase the cost of capital to the company. Furthermore, there is the danger that advertising expenditures may be used for the questionable purpose of influencing public opinion on matters of a political character. The extent to which advertising appropriations provided the sinews of war for the utilities' propaganda campaigns in the 1920's is commented upon elsewhere.⁵⁰ It is often difficult to draw the line between those expenditures which are legitimate, in that they improve the effectiveness of a public service enterprise, and those which are clearly improper.⁵¹

UNCOLLECTIBLE ACCOUNTS. What attitude should the regulatory authorities take with respect to expenses actually incurred by the companies, but which could be avoided or reduced by greater managerial efficiency? As a matter of principle, it is obviously unfair that the rates to consumers generally should be increased or maintained to permit the utility to recover the sums which should have been paid by delinquent customers, yet in practice some unpaid accounts are inevitable. Not only are the courts divided as to whether losses from delinquent accounts should be considered in testing the confiscatory character of rates established by state authorities,⁵² but the commissions are also of different opinions as to whether to consider losses from nonpayment of bills in establishing reasonable rates.⁵³ While a majority are willing to make a reasonable allowance for uncollectible items, commissions generally are very critical of any management that fails to employ devices which may reduce the incidence of loss—for example, requiring a deposit of all customers. The allowances which have been accepted by commissions have varied from

⁴⁸ *Whittier v. Southern Counties Gas Co.*, 14 Cal. R.C.R. 422 (1917); *Vincennes v. Central States Gas Co.*, P.U.R. 1920F, 356 (Ind., 1920); *Himes v. Pennsylvania Power & Light Co.*, 16 P.U.R. (N.S.) 65, 97, 98 (Pa., 1936).

⁴⁹ *Re Washington Gas Light Co.*, 25 P.U.R. (N.S.) 332 (D.C., 1938); *Re Lone Star Gas Co.*, P.U.R. 1933C, 1 (Okla., 1933).

⁵⁰ Chapter XXIII.

⁵¹ Chairman Maltbie commented on this problem in *Re Central Hudson Gas & Electric Corporation*, P.U.R. 1933B, 205, 211 (N.Y., 1932).

⁵² *Florida Teleph. Corp. v. Florida R. Commission*, 47 F. (2d) 467, 469 (C.C.A., 5th, 1931); *Reno P., L. & W. Co. v. Comm.* 298 Fed 790, 800 (D. Nev., 1923).

⁵³ *Brooklyn Union Gas Co. v. Prendergast* P.U.R. 1926A, 412, 7 F. (2d) 628 (N.Y., 1925); *West Palm Beach Water Co. v. West Palm Beach*, P.U.R. 1930A, 177 (Fla., 1929); *Re Etna Development Co.*, P.U.R. 1916A, 134, 137 (Cal., 1915); *Re Boyd Teleph. Co.*, P.U.R. 1932B, 499, 502 (Minn., 1921); *Re Elmira Water, Light & R. Co.*, P.U.R. 1920D, 257 (N.Y., 1920).

a fraction of 1 per cent to 2 per cent of operating revenues, with $\frac{1}{2}$ of 1 per cent the common allowance.

EXPENSES OF NON-UTILITY BUSINESSES. Some utility corporations are engaged in businesses other than the supply of the service for which they were established. The commonest instance is the sale of appliances. In many communities, local industries such as mining and lumbering corporations are engaged in supplying an electric service. Transportation companies sometimes operate amusement parks and engage in real-estate developments. Other utilities sell fuel, oil, or ice. Under normal circumstances, it is doubtful whether utilities should be either encouraged or permitted to engage in businesses other than the supply of the utility service. But if the utility is occupied with other ventures, it is essential that each project stand alone financially, that the non-utility operations not be carried on at the expense of the consumers of the utility service. Indeed, the non-utility phase of the enterprise should bear its share of the overhead costs—salaries, interest, taxes, insurance, et cetera.

INTERCOMPANY PAYMENTS. An important factor in bringing the regulation of the operating expenses of utilities to the fore has been the increasing frequency with which the costs of the operating utility are payable to affiliated corporations. These intercompany payments may be for the purchase of commodities, supplies, or equipment, or for the wholesale purchase of electric energy or gas. Or the transaction may involve the rendition of services—managerial, financial, or engineering—by employees of the holding company or its affiliate. The opportunities for abuse in such intercorporate transactions have already been developed in some detail.⁵⁴ The discussion of operating expenses arising out of these intercorporate relations may be most advantageously considered as a part of the whole problem of the regulation of holding companies and intercorporate relations.⁵⁵ It is an accepted principle of regulation that intercompany payments by operating utilities should be on the basis of the cost to the holding, or affiliated, company.

⁵⁴ Chapter IV.

⁵⁵ Chapter XIX.

CHAPTER XIX

REGULATION OF HOLDING COMPANIES AND INTERCORPORATE RELATIONS

I. THE NEED FOR REGULATION

THE PROBLEM. The problem of the holding company, particularly in its historical and economic phases, has been developed in an earlier chapter.¹ The influence of the holding company on other aspects of regulation has been apparent. Until the depression of the 1930's, the trend among utilities was toward increasing holding-company domination. As of 1929, three large holding-company groups—the United Corporation's interests, the Electric Bond and Share companies and the Insull companies, produced 45 per cent of the electrical energy generated and sold; thirteen additional groups, some of them interrelated, produced nearly 35 per cent. Altogether, holding-company systems controlled 82 per cent of the industry and held substantial interests in various local companies. During the 1920's the holding company became *the* problem of the utility industry and of utility regulation.

RECOGNITION OF THE NEED FOR REGULATION. Despite the urgency and seriousness of the problem, the need for regulation was only tardily recognized. Practically all of the problems that were later to arouse an irresistible demand for federal control of holding companies were either revealed or foreshadowed in the investigation into electric holding companies which the Federal Trade Commission began in 1925, and the publication of its report in 1927 indicated with a wealth of illustrative detail most of the abuses which had developed. In 1928 the Federal Trade Commission was launched upon another investigation, which together with the preparation of the reports extended over eight years; and this time the overwhelming evidence of holding-company abuses made further neglect of the problem impossible. In addition, the economic collapse subsequent to 1929 created a background against which far-reaching reforms could be proposed and adopted. The Federal Power Commission, Congressional committees, and special investigating committees in the states—New York, Wisconsin, Massachusetts, and others—served to add documentation to the story.

The first formal action to extend control over holding companies and their relations with operating utilities came in 1930 when New York and Wisconsin accorded their commissions jurisdiction over intercorporate relations.

ARGUMENTS AGAINST REGULATION. Despite the obvious need for regulation, legislation encountered vigorous opposition.² The position of the industry in opposition to regulation is well summarized in the following statement:

¹ Chapter IV.

² *Public Utility Holding Companies*, Hearings before the Committee on Interstate and Foreign Commerce, House of Representatives, 74th Cong., 1 sess., HR. 5423; *Public Utility Holding Company Act of 1935*, Hearings before the Committee on Interstate Commerce, United States Senate, 74th Cong., 1 sess., S. 1725.

"Every interest which the public has in holding companies has been protected by the comprehensive indirect regulation to which they have been subjected. The rates charged the public by the operating company, the valuation of its property for rate making or security issues, the items chargeable by it against operating expenses, including fees or compensation paid the holding company—these matters of immediate concern to the consumer are under the watchful eyes of the state commissions. Since the holding company charges no rates to consumers and owns no operating property how could the commissioners possibly protect the public interest by having power over rates which are not charged and property not possessed? Since the commissions already control the property and the securities upon the basis of which holding company securities are issued, what benefit to the public would there be in regulating the securities of the holding company, which could be no better or worse than the operating company's assets—the foundations upon which they rest? The state commissions' broad powers over the sale by operating companies of their capital stock or physical properties could hardly be made more effective by the addition of a purely formal requirement that both the seller and the buyer submit itself to the commission's jurisdiction, since a denial of authority for the sale to the prospective seller is quite as effective as a similar denial to the prospective buyer, or to both."³ The validity of these arguments can be assayed by those who have read Chapter IV. The stock argument against regulation of the holding companies, it was generally called "interference," was that the holding companies would be handicapped in the discharge of their principal function, which was to raise capital for the benefit of the operating utilities.

THE OBJECTIVES OF REGULATION. In the broad perspective, the regulation of holding companies must concern itself with the protection of those whose rights and interest have been jeopardized by the practices associated with the holding companies and their subsidiaries. Specifically, the consumers require protection in their rights to the continuance of adequate service at the lowest rates commensurate with the reasonable costs of operation, and investors require protection not simply with respect to the safety of their principal and the certainty of their income, but also that they may have a voice in the management of their properties proportional to their investments therein. With respect to management, the objectives must include a closer association of the ownership of the property with responsibility for its control and direction; the management of utility enterprises must conform to the standards of conduct prescribed by law and usage for trustees; and all transactions by officers and directors for their personal profit, either in the sale of materials or services to the holding company or its subsidiaries or in security speculations, must be placed absolutely beyond the pale. The financial and accounting affairs of the holding-company systems must be placed on an accurate and honest basis: both the book value of the assets and the capitalization of all companies must be limited to the actual and necessary investment; proper accounting with respect to income and expense items, especially as to profits and depreciation

³ Lillienthal, "The Regulation of Public Utility Holding Companies," 29 *Col. L. Rev.* 404, 405-407 (April, 1929). Mr. Lillienthal was not here presenting his own views.

charges, is a prerequisite to honest financial management; misrepresentations and manipulations in the sale of securities must be tabooed. The establishment of effective regulation presupposes a simplification of the corporate structures of holding-company systems; the exploitation of subsidiary corporations by parent companies and by their affiliates are without any possibility of justification. These objectives were first sought through state regulation, but jurisdictional limitations necessitated federal action.

2. STATE REGULATION

JURISDICTION OF THE STATES WITH RESPECT TO HOLDING COMPANIES. Two possible approaches to the holding-company problem have been open to the states: the direct regulation of the holding companies and of all affiliates having any dealings with operating companies, on the theory that effective control of operating utilities is possible only if there is direct jurisdiction over those who manage and direct their affairs; or more extensive control over all relations and transactions between the holding company and its affiliates, on the one hand, and the utility subsidiaries, on the other, with the control operating directly only upon the utility companies.

Direct regulation of holding companies. Are holding companies public utilities and as such amenable to the regulatory authority of the state commissions? The holding company has not generally been considered to be engaged in serving the public. Legally, it is usually without any authority to serve the public, since it normally has no franchise or certificate of convenience and necessity. It has no enforceable obligations with respect to consumers; consumers cannot demand service from the holding company itself. From the practical point of view, however, the holding company may be in complete control of the operations of the utility, even to details of routine management, and it may be the claimant of the residual, or even of all, utility earnings. Thus, it has been argued that the holding company is serving the public even though it operates through a subsidiary.

The statutes of a considerable number of states define a public utility as any corporation that "controls" a public-utility plant.⁴ Does the mere ownership of a majority of the voting stock of a utility subsidiary constitute that "control" which makes the holding company itself a public utility? The question has received different answers, but the weight of authority inclines toward the conclusion that the mere *holding* of the voting of stock of a utility does not bring the holding company within that category.⁵

Would direct state regulation of holding companies become possible or practicable if the legislatures should declare holding companies to be "public

⁴ Arizona, California, Kansas, Idaho, Illinois, Indiana, Maine, Maryland, Missouri, New Jersey, Oregon, Rhode Island, Tennessee, and Utah. The statutes of Connecticut, Nevada, New Hampshire, Oklahoma, Virginia, and Wyoming refer to the "operating" and "managing" of utility plants in defining the scope of regulation.

⁵ *Toledo, T., L. & P. Co. v. Smith*, 205 Fed. 643, 673 (N.D. Ohio, 1913); *Comm. v. Romberg*, 275 Ill. 432, 114 N.E. 191 (1916). *Contra: Re American W. W. & E. Co.*, 13 Md. P.S.C.R. 176 (1922).

utilities" and confer affirmative jurisdiction with respect to them? ⁶ The holding-company is not usually incorporated in the state in which most of its utility subsidiaries are located; it commonly chooses one of the more "liberal" states. A legislative declaration that the commission should undertake to regulate holding companies controlling local utilities might lead the commissions to disregard the separate corporate entities when the holding company was found to be actively controlling and directing the operating utility. The Supreme Court has recognized the propriety of this realistic approach when the circumstances have necessitated.⁷ But where the accomplishment of an essential public policy does not necessitate the disregard of the separate corporate entities, the courts are apparently willing to treat the subsidiary as an entity even though the latter is completely controlled by the holding company. At least such seems to be the force of the Supreme Court's holding in the *Chicago Telephone* case:

"... The fact that the relation of the Illinois Company to the American Company may demand close scrutiny, in dealing with certain questions which bear upon the validity of the rate order, cannot obscure the essential basis of that order, that is, that the Commission was imposing its requirement upon a corporate organization engaged in an intrastate public service and, as such, amenable to a valid exercise of the Commission's authority."⁸

The Supreme Court's ruling on the independent identity of the subsidiary company might seem a defeat for more effective control by state authorities, but in actuality it was not. Grave practical and legal difficulties beset the assertion by the states of direct regulatory power over holding companies. The most obvious difficulty, and one that would prove fatal, would be the inevitable conflict of regulations that would follow the exercise of authority over the same organization by a number of states.⁹ If it had been established that the holding companies were the real parties in interest in matters involving local rates and service, the next step would have been a decision that all the operations of these holding companies were interstate commerce and hence beyond the reach of state authorities. The wisdom of the Supreme Court's decision, therefore, lies in the fact that it preserved to the states the maximum jurisdiction with respect to local public utilities; it has been no obstacle to any really effective state action.

Indirect regulation of holding companies. Can the states regulate the

⁶ This proposal was approved by the National Association of Railroad and Utilities Commissioners at their 1928 convention.

⁷ *Chicago, M. & St. P. Ry. v. Minneapolis Civic & Commerce Assn.*, 247 U.S. 490, 501 (1918). See also *United Fuel Gas Co. v. Railroad Commission of Kentucky*, 278 U.S. 300 (1929); *Pontiac, O. & N. R. R. v. Comm.*, 203 Mich. 258, 168 N.W. 927 (1918); *Potter v. Michigan Bell Tel. Co.*, 246 Mich. 198, 224 N.W. 438 (1929).

In a number of cases, commissions have felt impelled to disregard separate corporate entities in the same holding-company system. See *Re Fort Worth Gas Co.*, P.U.R. 1929A, 136, 139 (Tex., 1928).

⁸ *Smith v. Illinois Bell Tel. Co.*, 282 U.S. 133, 144 (1930).

⁹ It will be recalled that the imposition of conflicting regulations on the railroads led to the *Wabash* decision in 1886, heralding the end of effective state authority over the interstate operations of railroads and necessitating the prompt establishment of federal control. (*Wabash St. L. & Pac. v. Illinois*, 118 U.S. 557 [1886].)

activities and dealings of holding companies through jurisdiction over the operating utilities? There does exist the possibility of a substantial measure of indirect regulation through the comprehensive powers which state authorities can exercise over local public utilities. A state may assert jurisdiction over the contractual relations which operating companies have with holding companies and it may supervise many of the transactions which subsidiaries have with the other companies in the system.

When questions of intercorporate relations were first presented to the courts, the attitude of the judiciary was not calculated to make indirect exercise of state authority particularly effective. The insuperable obstacle to successful state action was the disposition to assume that all contracts between the utility and its parent were made in good faith and with an exercise of independent judgment by the subsidiary's officers. This early attitude of the Supreme Court is typified by Mr. Justice McReynolds's summary overruling of the Missouri Commission's disallowance of a part of the 4½ per cent payment made by the Southwestern Bell Telephone Company to the American Telephone and Telegraph Company under the license contract between those companies.¹⁰ And the significance of this ruling was paraphrased into even simpler language by a lower federal court in another case that shortly arose with respect to the license contract:

"The presumption is that this contract was entered into in good faith and in the exercise of a proper discretion by the officers of both corporations. To overcome this presumption, it was incumbent on the defendants [the state authorities] to show that the contract was not made in the exercise of a proper discretion by the plaintiff's officers."¹¹ As long as the courts continued to follow these holdings, the state authorities were virtually estopped from any effective control over intercompany payments, for commissions were without the legal authority or the practical opportunities to sustain the burden of proving the impropriety of intercompany contracts.¹²

Facts convince where logic fails. The record of the holding companies in the late 1920's and the early 1930's brought a change in the judicial attitude toward intercompany relations and in the presumptions with respect to the reasonableness of intercompany payments. In the *Smith v. Illinois Bell Telephone Company* case in 1930, the Court remarked that the relations between the parent company and its subsidiaries called for "close scrutiny."¹³ A little more than a year later the Court considered the problem presented to the Public Service Commission of Kansas in the regulation of the Western Distributing Company, which delivered to local consumers natural gas that was purchased from the interstate pipeline of the Cities Service Gas Company. As these two companies were both subsidiaries of the Cities Service Company, and as the cost of gas was an important item in the operating costs of the utility, the Kansas Commission declined to grant an increase in rates without

¹⁰ *Southwestern Bell Tel. Co. v. Comm.*, 262 U.S. 267, 288-289 (1923). Quoted at p. 604.

¹¹ *Northwestern Bell Telephone Co. v. Spillman*, 6 F. (2d) 663, 664 (Neb., 1925). See also *Electric Public Utilities Co. v. West*, 154 Md. 445, 455, 140 Atl. 840 (1928); *Comm. v. Mountain States Tel. & Tel. Co.*, P.U.R. 1924C, 545 (Mont., 1924).

¹² See *Re Wis. Tel. Co.*, P.U.R. 1925D, 661, 674-675 (Wis., 1925).

¹³ 282 U.S. 133, 144 (1930).

an affirmative showing by the local company of the reasonableness of the wholesale price. Claiming that the Commission was bound to allow as a cost the wholesale price paid for the gas, the company declined to furnish any proof and appealed to the courts. The decision of the Supreme Court is rendered more significant by reason of the fact the company argued that the assertion of authority by the Kansas Commission was an unconstitutional attempt to regulate interstate commerce. The Court's holding constituted a milestone in the development of state control over intercorporate relations:

"Having in mind the affiliation of buyer and seller and the unity of control thus engendered, we think the position of the appellees is sound, and that the court below was right in holding that if appellant desired an increase of rates it was bound to offer satisfactory evidence with respect to all the costs which entered into the ascertainment of a reasonable rate. Those in control of the situation have combined the interstate carriage of the commodity with its local distribution in what is in practical effect one organization. There is an absence of arm's length bargaining between the two corporate entities involved, and of all the elements which ordinarily go to fix market value. The opportunity exists for one member of the combination to charge the other an unreasonable rate for the gas furnished and thus to make such unfair charge in part the basis of the retail rate. The state authority whose powers are invoked to fix a reasonable rate is certainly entitled to be informed whether advantage has been taken of the situation to put an unreasonable burden upon the distributing company, and the mere fact the charge is made for an interstate service does not constrain the Commission to desist from all inquiry as to its fairness. Any other rule would make possible the gravest injustice, and would tie the hands of the state authority in such fashion that it could not effectively regulate the intrastate service which unquestionably lies within its jurisdiction."¹⁴

With the precedent of the *Western Distributing Company* case, state commissions have been able to insist upon a showing of the reasonableness of the payments by operating companies to affiliated organizations. There has thus been afforded an opportunity for the exercise of a limited degree of control over holding companies and their non-utility affiliates, but this control is restricted to those activities which are directly related to the operating companies and does not embrace many holding-company activities that may be detrimental to the interests of consumers and investors.

The way of indirect regulation has been hard for state commissions, the operating utilities, and the holding companies. The commissions have proceeded through "requests for information." Before accepting the reasonableness of any intercompany charges, commissions request operating companies to furnish full data as to all holding-company practices and expenditures that bear on the reasonableness of charges paid, or to be paid. Because there is no means of knowing what specific information may be relevant, commissions are forced to be both inclusive and detailed in their requests. The laboriousness of the indirect technique is illustrated by the years which the Wisconsin Pub-

¹⁴ *Western Distributing Co. v. Public Service Commission of Kansas*, 285 U.S. 119, 124-125 (1932).

lic Service Commission devoted to the investigation of the rates of the Wisconsin Telephone Company. Granting that the American Telephone and Telegraph Company was performing valuable services for the Wisconsin Telephone Company, the Commission stated that the issue was not the propriety of the arrangements between the parent company and the subsidiary, but whether (1) the activities of the parent company were reflected in actual savings to the subsidiary, (2) whether such economies as were realized were passed on to the users of the telephone service, and (3) whether the telephone operations of the parent company were carrying the burden of its non-utility activities.¹⁵ In order to obtain enlightenment on these issues, the Wisconsin Commission requested answers to an extraordinary list of queries, covering virtually all aspects of the parent company's operations.¹⁶

Success in indirect state regulation of intercorporate relations depends upon simplicity of intercorporate relations and the availability of information relevant to a judgment as to the reasonableness of intercorporate payments. Even if it is anxious to co-operate fully in the commission's inquiry, the holding company cannot supply information that is not in its possession. In the *Wisconsin Telephone Company* case described above, the American Telephone and Telegraph Company was unable to furnish all of the data that the Commission required in the form in which it was requested. This is highly significant, for the records of the American Telephone and Telegraph Company were probably more accurate and more detailed than those of any other holding company; for many years its accounts had been subject to the rather inactive supervision of the Interstate Commerce Commission. The assertion of similar authority with respect to many electric and gas utilities would have been barren of any significant results because the material information has been nonexistent. Nevertheless, the establishment of the right of the state commissions to push their inquiries with respect to the reasonableness of intercompany payments and other relations established a regulatory principle of great importance.

Statutory provisions governing intercorporate relations. To what extent have the opportunities for indirect regulation of intercorporate relations been embraced? A complete answer would require a consideration of every state commission case involving any subsidiary of a holding company. A partial answer may be found from an analysis of the statutory provisions wherein state legislatures have enlarged the jurisdictions of their regulatory bodies to cope with the holding-company problem. Some measure of regulatory supervision is possible without specific statutory provision, for it is part of the im-

¹⁵ *Re Wisconsin Tel. Co.*, P.U.R. 1931E, 101, 115-116 (Wis., 1931).

¹⁶ The enumeration, which extended over five closely printed pages, began with a request for all accounting forms for both the parent and its subsidiaries and all instructions as to their preparation; the parent company's revenue and expense accounts, in detail, for the years 1919 to 1931; the costs, revenues, sales, and all allocations of overhead costs, for the Western Electric Company, a subsidiary engaged in the manufacture of telephone and other equipment, all these figures to show separately the data for various types of telephone equipment; the details of depreciation accounting, inventory valuations, income and expense statements, not only for Western Electric Company, but for its subsidiaries as well; and full information with respect to the manufacture, costs, and sales of non-telephone equipment; the payrolls of all subsidiary companies (other than operating telephone companies) with which the Wisconsin Telephone Company had any transactions. (*Ibid.*, 129-134.)

plied powers of rate control that the commission may consider the propriety and reasonableness of any expenditures of a utility. Yet such control can be effective only if the commission possesses ancillary powers such as are conferred only by affirmative statutory provisions.

If commission regulation of intercorporate relations is to be satisfactory it must include authority with respect to at least five matters:

(1) The commission must have jurisdiction over affiliated interests, and affiliated interests must be so defined as to enable the commission's authority to reach every situation which requires the exercise of control;

(2) The commission must have jurisdiction over the acquisition of the voting stock of public utilities by other corporations;

(3) The commission must possess similar authority with respect to the acquisition of the physical assets of utility corporations;

(4) The commission must have extensive authority with respect to intercompany contracts and all intercompany payments, including the payment of dividends; and

(5) The commission must supervise intercompany loans, if they are not forbidden.

Only a minority of the states have enacted statutes which enable their commissions to deal effectively with those intercorporate relations which are within state jurisdiction. In view of the disclosures with respect to the abuses of holding-company power, the present inadequate scope of state regulation of holding companies and intercorporate relations indicates how uneven and spotty is the pattern of state control, and how incomplete is the protection afforded consumers and investors. Only eleven legislatures appear to have made a serious attempt to cope with their responsibilities.¹⁷ In other states, the legislatures have largely defaulted.

JURISDICTION OVER AFFILIATED INTERESTS. There are more states having statutory provisions defining affiliated interests than there are statutes affirmatively conferring jurisdiction on the commission with respect to such affiliated interests. Twelve jurisdictions grant direct control over affiliated interests to their commissions;¹⁸ however, there are other states that provide for commission control over specified intercompany transactions. Oregon is the only state to classify the affiliated companies as public utilities. The District of Columbia, New Jersey, and Oregon laws simply provide that the books of affiliated interests may be examined; the Rhode Island statute merely requires affiliates to furnish reports when such are requested by the commission, while the Michigan commission may require the production of records relating to operating utilities. An effective statute would require the disclosure of all affiliated interests, the submission of reports by affiliates at the commission's request, and the opening of the affiliate's books to examination by the commission or its representatives, only four states have these provisions in their statutes.¹⁹

¹⁷ Illinois, Indiana, Kansas, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, Virginia, Washington, and Wisconsin.

¹⁸ Alabama, District of Columbia, Illinois, Indiana, Kansas, Massachusetts, New Hampshire, New Jersey, New York, Oregon, Pennsylvania, and Rhode Island.

¹⁹ Illinois, Indiana, Kansas, and New York.

The definition of "affiliated interest" is an important index of the adequacy of commission jurisdiction. Some nineteen states have statutory definitions of affiliated interests.²⁰ If the commission is to reach all intercompany transactions that require its supervision, the definition of affiliated interests should be broad and comprehensive. The holding of voting stock, interlocking directorates, and the possession of common officers are the normal bases of control of one corporation by another, but the statute should also provide for other types of influence over a utility's policy by other companies or individuals. It is not enough to provide for the direct lines of control—parent, grandparent, great-grandparent, et cetera—; it is also essential to recognize indirect affiliations—the cousins, first, second, et cetera. Where the classification of affiliated interests rests upon the owning of stock, a 5 per cent control is most frequently taken to signify affiliation,²¹ with a 10 per cent stock holding the criterion in other states.²² In the matter of common directors, five states specify that companies are affiliates if they have one or more directors in common,²³ while two states require two or more directors in common.²⁴ In a number of instances the definition embraces directors in any chain of affiliates, although perhaps such might be implied without a particular provision to that effect. The enactments with respect to common officers parallel the provisions regarding common directors. Other relations usually refer to personal and family ties, to contractual relations, and similar evidences of affiliation. Indirect affiliations are included by implication in thirteen statutes.²⁵ In most states, an indirect affiliate is one "5 [or 10] per cent of whose voting stock is owned by a person or corporation having 5 [or 10] per cent control over the utility," or any chain of such control. Massachusetts makes one of its tests the "absence of equal bargaining power."

In order to assure that all "affiliated interests" shall be known to the commission, the statute should specify that each utility shall list and report every owner of 1 per cent or more of its voting stock. The extent of jurisdiction over these "affiliated interests" should also be specified—the commission should

²⁰ The most comprehensive definitions are those found in the statutes of Indiana, Kansas, New York, Oregon, and Wisconsin.

Alabama, *Laws 1928*, Sec. 9792; Arkansas, *1937 Statutes*, Sec. 2002 (a); Connecticut, *1930 General Statutes*, 1935 Supp., Sec. 1414c (f); District of Columbia, *1929 Code*, p. 384, Sec. 23; Illinois, *Smith-Hurd Annotated Statutes*, Ch. 111½, Sec. 27; Indiana, *Burns' Indiana Statutes*, 1933, Ch. 4, 54-403; Kansas, *1935 General Statutes*, Art. 14, 66-1401, 66-1216; Maine, *1930 Revised Statutes*, Ch. 62, Sec. 45; Massachusetts, *1932 General Laws*, Ch. 164, Sec. 94B, p. 2160; New Hampshire, *1926 Public Laws*, 1933 Supp., Ch. 258-A, 1, II; New Jersey, *New Jersey Statutes Annotated*, 48:3-7.1; New York, *Cahill's 1930 Laws of New York*, Ch. 49, Art. 6, Sec. 110; Oregon, *1930 Oregon Code*, 61-281; Pennsylvania, *Purdon Pennsylvania Statutes*, Ch. 3, Sec. 243; Rhode Island, *1938 General Laws of Rhode Island*, Ch. 122, Sec. 60; South Carolina, *1932 Code of Laws*, Sec. 8252; Virginia, *1926 Virginia Codes*, Sec. 2774B; Washington, *Remington Revised Statutes*, Sec. 10440-1; Wisconsin, *1939 Statutes*, 196.52 (1).

²¹ Alabama, New Jersey, New York, Oregon, Pennsylvania, Washington, and Wisconsin.

²² Illinois, Indiana, Kansas, Rhode Island, and Virginia. Arkansas and Maine specify 25 per cent, a figure so high as to restrict unduly the reach of the statute. Although not formally defined as such, a company in Vermont having 25 per cent control is treated as an affiliate for purposes of establishing jurisdiction over intercompany contracts. Massachusetts and South Carolina define an affiliate in terms of "majority or substantial control."

²³ Illinois, Indiana, Kansas, New York, and Wisconsin.

²⁴ Oregon and Virginia.

²⁵ Illinois, Indiana, Kansas, Massachusetts, New Hampshire, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Virginia, Washington, and Wisconsin.

have jurisdiction over affiliated interests having transactions other than the ownership of stock and the receipt of dividends with public utilities, with respect to those transactions. Such authority would be meaningless without the additional provision that the commission shall have access to all the applicable accounts and records and shall have the right to call for reports from the affiliated interests.

The constitutionality of the inquiry procedure contained in these statutes has been sustained by the Supreme Court in a case challenging the validity of an Illinois statute.²⁶ The Illinois Commerce Commission, in a proceeding involving the wholesale rates for natural gas sold to local distributing companies by the Chicago District Pipeline Company (an Illinois corporation engaged in intrastate commerce), directed an affiliated interstate corporation, the Natural Gas Pipeline Company (a Delaware corporation engaged in interstate commerce), to make available all of its accounts and records relative to its sale of natural gas to the Chicago District Pipeline Company.²⁷ The Natural Gas Pipeline Company refused to comply with the order and appealed to the courts, contending that the statute and order were in conflict with the commerce, equal protection, and due-process clauses of the federal constitution.²⁸ The Supreme Court refused to find that either the commerce clause or the Fourteenth Amendment afforded any "basis for saying that any person is immune from giving information appropriate to a legislative or judicial inquiry."²⁹

ACQUISITIONS OF UTILITY SECURITIES OR ASSETS. *The need for regulation.* The holding-company systems have been built up largely through the acquisition of the voting stocks of operating utilities. It would appear logical, therefore, that the control of holding companies should begin with an attempt to control the acquisition of the securities which enable holding companies to exploit operating properties to their own advantage. Many state commissions have had jurisdiction over the acquisition by one utility of a controlling interest in another utility or over the merger of two or more operating utilities. However, the jurisdiction of state authorities did not extend to acquisitions accomplished through a purchase of a stock by a holding company incorporated in another state.

Many of the acquisitions and consolidations were so planned and executed as to bring increased security of income to investors and lower rates with better service to consumers. But other acquisitions were characterized by features that were harmful to both investors and consumers. Four potential sources of danger in the unregulated acquisition of operation properties by the holding-company systems have been present: First, many acquisitions were not part of a rational plan for such integration of operating properties

²⁶ *Natural Gas Pipeline Co. v. Slattery*, 302 U.S. 300 (1937).

²⁷ The Natural Gas Investment Company (Illinois) controlled both the Natural Gas Pipeline Company and the Chicago District Pipeline Company through stock ownership, and the three corporations also had a number of directors in common.

²⁸ The essence of the company's contention was that the statute could not authorize an inquiry into intercorporate relations, nor the commission pursue it, without prior proof of common control or an absence of arm's-length bargaining. The acceptance of such a contention would have been fatal to the practical administration of the law.

²⁹ 302 U.S. 300, 306 (1937).

as would afford the maximum gains in efficiency and greatest savings in costs. Secondly, the acquisitions of control took place at an unregulated price. Thirdly, the financing of the acquisition of operating companies were made to produce speculative profits for promoters and the holding company. Fourthly, there was some danger in the secrecy with which such acquisitions were accomplished.

These dangers materialized and produced the expected consequences. The loss of potential economies in operation and improvements in service, the pressure on operating companies to yield excessive profits to the holding company, and the deterioration in the investment standing of utility securities, all combined to maintain higher charges than would otherwise have been necessary. The investor who provided the funds with which these acquisitions were financed incurred heavy risks for the possibility of contractually limited return. These dangers did not go without warnings from within and without the industry,³⁰ but the temper of the times rendered the warnings of little avail.

The acquisition of securities. In view of the primacy of the problem with respect to the regulation of holding companies, it is surprising that only twenty-one states have any statutory provisions respecting the acquisition and holding of the voting stock of public utilities by other corporations.³¹ Seven jurisdictions attempt to prevent the acquisition of a controlling interest in local utilities by holding companies.³²

A Massachusetts statute forbids any corporation, unless authorized by a special act of the legislature,³³ to "purchase, acquire, take, or hold, directly or indirectly, more than 10 per cent of the total capital stock of any corporation authorized to operate as a railroad, street railway, motor, local transit, gas, or electric utility."³⁴ Another statute directed against the control of Massachusetts utilities by holding companies provides that if any foreign corporation issues any debt secured in whole or in part by its controlling interest in a domestic utility company, the utility company shall be liable to dissolution in an action brought by the Attorney General.³⁵ It may be noted that these statutes have not been wholly successful, for foreign holding companies extended their systems into Massachusetts through the use of the so-called volun-

³⁰ *Electrical World*, Mar. 20, 1926, Vol. 87, No. 12, p. 623. See also Ripley, "More Light and Power Too," 138 *Atlantic Monthly*, 667 (Nov., 1926).

³¹ Alabama, 1928 *Laws*, Sec. 9825; Arizona, 1928 *Arizona Revised Code*, Sec. 708; District of Columbia, 1929 *Code*, p. 390, Sec. 78; Illinois, *Smith-Hurd Annotated Statutes*, Ch. 111½, Sec. 276; Indiana, *Burns' Statutes of 1933*, Sec. 54-509; Kansas, *General Statutes*, 1935, Art. 1, 66-127; Maine, 1930 *Revised Statutes*, Ch. 62, Sec. 44, p. 1040; Maryland, *Flack-Annotated Code of 1939*, Art. 23, Sec. 405; Massachusetts, 1932 *General Laws*, Ch. 164, Sec. 31, p. 2143; Missouri, *Annotated Statutes*, p. 6593, Sec. 5177; New Hampshire, 1926 *Public Laws*, Sec. 31, p. 939; New Jersey, *Annotated Statutes*, 4813-10; New York, 1930 *Cahill's Laws*, Art. 4, Sec. 70; North Dakota, 1913-1925 *Supp. Compiled Laws*, Sec. 4609, Ch. 22; Ohio, *Page's General Code*, Sec. 614-60; Oregon, 1930 *Code*, 61-285; Pennsylvania, *Purdon Statutes*, Ch. 3, Sec. 243; Rhode Island, 1938 *General Laws*, Ch. 122, Sec. 59; Vermont, 1933 *Public Laws*, Ch. 242, Sec. 5952; West Virginia, 1937 *Code*, Sec. 2562 (2); Wisconsin, 1939 *Statutes*, Sec. 196.52 (3).

³² District of Columbia, Massachusetts, New Hampshire, New York, Oklahoma, Vermont, and Wyoming.

³³ There seem to have been no such enactments.

³⁴ Mass., *General Laws*, C. 156, Sec. 5.

³⁵ *General Laws*, C. 181, Sec. 10. There have apparently been no cases under this section of the law.

tary trust which was not included within the statutory provision as drawn.

The New York statute is also of long standing and many cases have arisen under it. In a section devoted to the transfer of franchises and the lease of utility plants, there occurs the provision that "save where stock shall be transferred or held for the purpose of collateral security only with the consent of the commission . . . , no stock corporation of any description, domestic or foreign, other than a gas corporation or electric corporation or street railroad corporation, shall purchase or acquire, take or hold, more than 10 per cent of the voting capital stock issued by any gas corporation or electric corporation organized or existing under or by virtue of the laws of this State."³⁶ Corporations already lawfully holding a majority of the stock of any domestic utility are permitted, with the consent of the Commission, to acquire the remainder of the stock. And any corporation, with the Commission's approval and subject to such conditions as the Commission shall impose, may acquire and hold more than 10 per cent of the voting capital stock; but the statute excludes from this exception all utility corporations operating in New York City.

In the administration of a law such as the New York statute, two questions have arisen: Shall foreign corporations, which are largely beyond the jurisdiction of the commission, be permitted to acquire a controlling interest in the domestic utility corporations? And shall an acquisition of utility securities be permitted when the purchase price and other conditions of the acquisition are not reasonable and consistent with the public interest?

The New York Public Service Commission has on several occasions permitted the acquisition of the voting stock of domestic utilities by foreign holding companies, despite the obvious intent of the law to prevent the taking and holding of utilities' stock by holding companies.³⁷ In the *Power and Electric Securities Corporation* case in 1925, the Commission was of the opinion that the foreign control of domestic utilities could have no injurious consequences for consumers.³⁸ Fuller experience with holding companies belatedly changed the attitude of the Commission, and during the late 1920's and the 1930's the Commission was loath to sanction the acquisition of control of domestic utilities by holding companies.³⁹ The Commission has been handicapped by the interpretations which the state courts plan placed on its powers. In one instance where it had approved a proposed issue of securities by a domestic utility, the Commission refused to sanction their sale to a holding company in the Associated Gas and Electric system; although it already controlled the local company, the New York Electric Company would have had less than a controlling interest if the new issue had been sold to others. Here was clearly an occasion for the exercise of discretion, yet the Commission was overruled by the court.⁴⁰

³⁶ New York, *Public Service Law*, Sec. 70.

³⁷ *Re South Shore Natural Gas & F. Co.*, P.U.R. 1917C, 274 (1917); *Re Lockport Gas & E. L. Co.*, P.U.R. 1917F, 866 (1917); *Re Ridgefield Electric Co.*, P.U.R. 1925D, 317 (1925).

³⁸ P.U.R. 1926A, 855, 859 (1925).

³⁹ *Re Morgan & Wyman Elec. L. & P. Co.*, P.U.R. 1925D, 323 (1925); *Re N.Y. Elec. Co.*, P.U.R. 1928D, 247 (1928); *Re Columbia Gas & E. Corp.*, P.U.R. 1931C, 247 (1931); *Re Central Greyhound Lines*, 20 P.U.R. (N.S.) 246 (1937).

⁴⁰ *N. Y. State Elec. Corp. v. Comm.*, 227 App. Div. 18, 22-23, 236 N.Y. Supp. 411, 416 (1929).

The acquisition of utility assets. The acquisition of utility assets, physical properties, and franchises may be more easily controlled than the acquisition of securities, which are presumably obtainable by any who can buy them. The physical properties are located within the state and can be used only in conjunction with a franchise, which the state is free to confer or withhold. A minimum provision for the protection of the public interest in the transfer of utility properties and franchises would be the requirement that such transfers occur only after an investigation by the commission and only with its approval. Yet there are only twenty-one states in which commission approval is a prerequisite to the transfer of utility assets.⁴¹ Some statutes restrict such transfers to foreign corporations.⁴²

Conditions prescribed by statute or commission order. The requirement that the approval of the commission be obtained for the acquisition of utility securities or assets implies that the commission may attach conditions to its approval.⁴³ Such conditions are commonly concerned with the price at which the properties are to be acquired, the accounting entries by which the transfer shall be recorded, the future rate base, an offer to purchase the outstanding securities of the utility to be acquired, the future maintenance of service standards, or the rates and charges to be observed after the new owners take control.

The burden of proof should be on the utility to establish by convincing evidence the nature and the significance of the public benefits that are to follow the acquisition. The commission should not grant its approval merely on a basis of a negative finding that no harm to the public will be apparent, for public injury is often not discoverable until after the consummation of the acquisition; if positive gains to the public are not obvious, the possible dangers to the public interest should not be risked.⁴⁴ These common-sense principles, while generally acknowledged, have on rare occasions been repudiated by the courts.⁴⁵

In some instances, the commission's authority to attach conditions to its or-

⁴¹ Alabama, 1928 *Laws*, Sec. 9827; California, 1937 *Deering's General Laws*, Act 6386, Sec. 511; Connecticut, 1930 *General Statute* (repealed 1935), Sec. 3616; District of Columbia, 1929 *Code*, p. 390, Sec. 78; Illinois, *Smith-Hurd Annotated Statutes*, Ch. 111½, Sec. 29; Indiana, 1933 *Burns' Statutes*, 54-509; Kansas, 1935 *General Statutes*, Art. 1, 66-136; Maine, 1930 *Revised Statute*, Ch. 62, Sec. 44, p. 1040; Maryland, *Flack—Annotated Code of 1939*, Art. 23, Sec. 388, Sec. 405; Massachusetts, 1932 *General Laws*, Ch. 164, Sec. 21; Missouri, *Annotated Statutes*, p. 6592, Sec. 5176; New Hampshire, 1926 *Public Laws*, Sec. 28, p. 938; New Jersey, *Annotated Statutes*, 48:3-21; New York, 1930 *Cahill's Laws*, Art. 4, Sec. 70; North Dakota, 1913-1925 *Supp. Compiled Laws*, Sec. 4609, Ch. 21; Ohio, *Page's General Code*, Sec. 614-73; Oregon, 1930 *Code*, 61-282; Pennsylvania, *Purdon's Statutes*, Ch. 3, Sec. 182 (c); Rhode Island, 1938 *General Laws*, Ch. 122, Sec. 59; Vermont, 1935 *Annotated Public Laws*, Sec. 5954; West Virginia, 1937 *Code*, Sec. 2562 (2); Wisconsin, 1939 *Statutes*, 196.53.

⁴² Illinois, Ohio, Oregon, Virginia, and Wisconsin. Arizona, California, and Colorado permit transfers to foreign corporations only when the latter comply with the laws of the state in every particular.

⁴³ Only two state statutes provide specifically that the commission may attach conditions to its approval (Massachusetts and New York).

⁴⁴ See *Re Northern Penn. P. Co.*, 15 P.U.R. (N.S.) 390 (Pa., 1936).

⁴⁵ The Maryland Commission refused to approve the acquisition of four small Maryland operating properties by the Electric Public Utilities Company, simply on the ground that there was no convincing evidence that the public would benefit from the transactions. In a surprising decision, the Maryland Court of Appeals held that the discretion of the Commission was limited to those situations where it was established that the transfer would be detrimental to the public interest. (*Electric Public Utilities Co. v. West*, 154 Md. 445, 140 Atl. 840 [1928].)

ders has been seriously circumscribed by judicial interpretation. While holding that "the power to grant consent includes the power to withhold consent" or "to make its consent conditional upon change in the terms of the contract of purchase," the New York Court of Appeals stated, in effect, that the Public Service Commission had only the "power to couple its consent with any direction which it would have independent power to make."⁴⁶ This interpretation destroys any benefit to be derived from the power to attach conditions. The whole purpose of attaching conditions is to protect the public interest where the statute is inadequate or silent, and to allow flexibility in meeting the requirements of the particular situation.

A number of state laws impose statutory conditions on the acquisition of utility securities or the transfer of utility franchises or assets. To the extent that it is possible to formulate pertinent conditions in the statute, the authority of the commission is strengthened, provided the commission's discretion to impose additional conditions is not thereby curtailed.

THE EXERCISE OF CONTROL. The control over the operating utility by the holding-company management has been an ever-present danger, particularly for the consumer interests. Despite the urgency of coping with the matter at its source, none of the states has sought to stop the exercise of control over local utilities by holding companies.

A provision in the District of Columbia law suggests a solution of the problem of foreign control. The statute reads that no foreign or local holding company or public utility shall "own, control, or hold or vote stock of or bonds of any public utility corporation . . . authorized to do business in the District of Columbia, except as heretofore or hereafter expressly authorized by Congress."⁴⁷ And to make doubly sure, the statute makes it unlawful for any public utility to sell or transfer any portion of its stock or bonds to any other utility corporation or holding company.⁴⁸ While there may be some doubt as to whether a state can prevent the open-market purchase of the securities of domestic utilities by individuals and corporations beyond its jurisdiction, the District of Columbia statute seems to meet the essential problem. With the example of the LaFollette Antimerger Act, it is surprising that the states have not tried this expedient in their struggle with holding-company control of local utilities.

INTERCOMPANY CONTRACTS AND PAYMENTS. *The problem.* Utility companies purchase services, commodities, capital equipment, the construction of new properties, and the use of loan funds from both affiliated and non-affiliated organizations. Where such transactions occur between the utility and its

⁴⁶ *Iroquois Gas Corp. v. Comm.*, 264 N.Y. 17, 19, 189 N.E. 764, 765 (1934).

⁴⁷ Act of March 4, 1913, 27 Stats. 974, Sec. 11.

⁴⁸ The violation of the statute with respect to the Washington Gas Light Company by the Central Public Service Corporation led to an order by the District of Columbia Commission directing the latter company to cease exercising such control through the voting of stock through officers, directors, trustees, agents, servants, employees, or assigns, and to divest itself immediately and unconditionally of its control. (*Re Washington Gas Light Co.*, P.U.R. 1932D, 47 [D.C., 1932].)

The Commission subsequently consented to a court order under which the holding company was permitted to retain the stock but voluntarily relinquished managerial control over the local utility and agreed to conditions that would protect the local management from domination by foreign interests. (*Re Washington Gas Light Co.*, P.U.R. 1933D, 194 [D.C., 1933].)

parent company or an affiliated corporation, there is an absence of arm's-length bargaining, with all of the protection which independent bargaining implies. The development of the holding-company system has, therefore, forced regulatory authorities to turn their attention to intercompany transactions and to attempt to provide those safeguards for consumers and investors which had therefore been provided by the independent position of the utility.⁴⁹

The attempt to pass upon the reasonableness of intercompany payments after the expenditures have been made must always be relatively ineffective. Even if the protection of investors is not recognized as an object of utility regulation, the imposition of "disallowances" on the investor, if it happens repeatedly, must finally have the effect of increasing the cost of capital, to the ultimate disadvantage of the consumer. The effective protection of the consumer and a decent regard for the welfare of the investor both require that the commission's responsibility and authority should begin with the negotiation of the contracts.

The recognition of the dangers implicit in intercompany transactions did not immediately give rise to an effective procedure for safeguarding the public interest. At first, questions with respect to intercompany contracts were raised only when the commission was confronted with a rate case, and the exercise of commission jurisdiction was confined to determining whether such payments were appropriate elements of the utility's operating or capital costs, or whether they should be disallowed. Even such regulation was seriously handicapped: the exercise of the commission action was confined to the disallowance of the payments; the commission lacked specific statutory authority to extend its supervision over intercompany contracts, and such regulations as were imposed were justified as implicit in the power to regulate rates; and finally, the commissions were without the requisite data on which to judge the reasonableness of intercompany payments.

Commission jurisdiction over intercompany transactions. Effective control over intercompany payments begins with the establishment of commission authority over intercompany contracts. Approximately half of the states have recognized this and have amended their public service laws, giving their commissions jurisdiction over contracts between affiliated interests.⁵⁰ Even in

⁴⁹ The concealed dangers to the consumer in intercompany contracts calling for the performance of managerial, financial, engineering, and construction services by affiliated organizations were recognized as soon as the true nature of the relations between the holding company and its subsidiaries was perceived.

See *Re General Order U-6*, P.U.R. 1932E, 347 (Ala., 1932); *Potter v. Michigan Bell Tel. Co.*, 246 Mich. 198, 224 N.W. 438 (1929); *Re New York State Electric & Gas Corp.*, P.U.R. 1932E, 1 (N.Y., 1932); *Re United Light & Power Co.*, P.U.R. 1915C, 622 (Cal., 1915); *Re Los Angeles Gas & Elec. Corp.*, P.U.R. 1927C, 545 (Cal., 1926); *Re State Line Generating Co.*, P.U.R. 1929B, 97 (Ind., 1928); *Comm. v. Chesapeake & Potomac Tel. Co.*, P.U.R. 1925B, 545 (Md., 1924); *Re Awarding of Contracts*, P.U.R. 1917B, 297 (Mass., 1916).

⁵⁰ States giving the commission jurisdiction over contracts between affiliated interests: Alabama, *Code of 1928*, Sec. 9763; Connecticut, *General Statutes*, 1930, Sec. 3585; Indiana, *Burns' Indiana Statutes*, 1933, Sec. 54-509; Kansas, *General Statutes*, 1935, Sec. 66-1402; Maine, *Laws of 1933*, Ch. 213, Sec. 38-A; Maryland, *Flack—Annotated Code of 1939*, Art. 23, Sec. 368; Massachusetts, *General Laws*, 1932, Ch. 164, Sec. 94B; New Hampshire, *General Laws*, 1933 Supplement, Ch. 258A, Sec. 3; New Jersey, *New Jersey Statutes Annotated*, 48:3-7.11; New York, *Public Service Law*, 1930, Sec. 110, Par. 3, Ch. 760; North Carolina, *Code of 1939*, Sec. 1037 (e); Oregon, 1930 *Oregon Code*, Sec. 61-240; Pennsylvania, *Purdon's Pennsylvania Statutes*, Title 66, Sec.

the absence of specific statutory provisions, the regulation of intercompany payments can be brought within the broad scope of the commission's authority to inquire into the reasonableness of any expenses which the utility might claim as a necessary cost of rendering the service. However, a number of the states have considered it advisable to make statutory provision for the commission's supervision of intercompany payments.⁵¹ Some legislatures have even granted the commission authority to forbid any payment by a utility company on an intercompany contract if such payments are contrary to the public interest.⁵²

The statutory provisions with respect to commission supervision over intercompany contracts fall into two classes. In some states, intercompany contracts must be filed with the public service commission but the formal approval of the commission is not a prerequisite to their taking effect. If after an investigation and hearing the commission is not satisfied that the contracts are in the public interest, the commission may require a modification of the contract's terms or it may declare the contract void.⁵³ A second group of statutes not only requires that intercompany contracts must be filed with the commission, but also requires that such contracts must have the prior approval of the commission before they may become effective.⁵⁴ A few states have specifically provided that intercompany contracts may be approved only after a satisfactory showing of the cost to the affiliated organization.⁵⁵

Standards of reasonableness. The extension of regulatory authority over intercompany payments assumes a standard of reasonableness by which the propriety of these payments may be judged. Three standards have been advanced.

(1) When the question of the propriety of intercompany payments was first raised, regulatory authorities tended to proceed upon the assumption that these payments could be attacked only if there was a showing of fraud or bad faith. They did not distinguish between contracts with affiliated interests and those entered into with independent organizations on the basis of arm's-

1271-1274; Rhode Island, *General Laws of 1938*, Sec. 60, 3 (b) and (c); South Carolina, *Code of Laws 1934* (Suppl.), Sec. 8555-2 (8); Utah, *1933 Revised Statutes*, Sec. 76-4-28; Vermont, *Public Laws, 1933*, Sec. 6087; Virginia, *1940 Supplement to Laws of 1936*, Title 33, Sec. 2774i2; Washington, *Remington's Revised Statutes*, Sec. 10440-2 and 10440-5; West Virginia, *Code of 1937*, Sec. 2562(2)(a); Wisconsin, *1939 Statutes*, Sec. 196.52 (3).

States requiring that the contract be filed with the commission; Ohio, *Page's Ohio General Code*, Sec. 614-7; Wyoming, *Wyoming Revised Statutes, 1931*, Sec. 94-137.

States giving the commission power to investigate such contracts: Louisiana, *Dart's General Statutes, 1939*, Ch. 6, Sec. 8005.

⁵¹ Alabama, Connecticut, Illinois, Louisiana, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, South Carolina, Virginia, Washington and Wisconsin.

⁵² Such provisions are found in Illinois, Kansas, Massachusetts, New Hampshire, New York, Pennsylvania and Washington. The statutes of Virginia and Wisconsin provide that the Commission shall forbid such payments unless the utility company makes a satisfactory showing of the cost of providing the service. The statutes of Rhode Island and Wisconsin provide that the Court may order a utility company to cease payments under an intercompany contract; in the latter state, the Courts are instructed to void contracts if necessary to enforce a cease and desist order of the Public Service Commission.

⁵³ New York, *Public Service Law*, Sec. 110, Par. 3 (added in 1930).

⁵⁴ Illinois, *Smith-Hurd Illinois Annotated Statutes* (1935), Ch. 111½, Sec. 8a, Par. 3.

⁵⁵ Virginia, Washington, Wisconsin.

length bargaining. There was an assumption of good faith, independent negotiation, and an absence of fraud, unless the contrary should be shown.⁵⁶ It is apparent that adherence to this standard must have the effect of imposing the burden of proof upon the party adverse to the utility, and makes it almost inevitable that the intercompany payment will be undisturbed.

(2) The utilities have advanced the proposition that the propriety of the intercompany payments should be judged according to the value of the services rendered. Thus, it has been urged that the intercompany payment is justified if the services are valuable to the operating utility, if the charge is less than the utility would have to expend to supply itself, or if the charge is less than would have to be paid to obtain equivalent services or supplies from an alternate source.⁵⁷

The value-of-service test of the reasonableness of intercompany payments proceeds upon the basic assumption that all the benefits arising from the establishment of the holding-company system should accrue to investors, or rather, to the holding company. The acceptance of this test would leave the operating company no better off than it would be if it were actually under the necessity of providing these specialized services for itself or of purchasing them from non-affiliated interests.

From a practical point of view, the value-of-service standard involves certain ambiguities. In many instances, it would not be possible for the utility itself to supply the services. In other instances, especially in the matter of specialized and patented equipment such as is furnished by the American Telephone and Telegraph Company through its Western Electric Company, identical equipment is not available from independent sources. While the value standard might be made the test of the competence of management in its dealings with independent interests, this yardstick cannot usually afford a satisfactory test of the propriety of intercorporate payments.

(3) Regulatory authorities have urged that the costs to the affiliated service companies be made the test of the reasonable charge. The fundamental question is whether *any* profit should be allowed on services performed by one unit or department of a business for another; and the question is not changed where the two departments are separately incorporated units of a holding-company system. Cost to the affiliated company is a standard which conforms to the general principles of rate regulation and offers a reasonable promise of eliminating abuses arising out of holding-company control.

The propriety of the cost standard was presented to the Supreme Court in a rate case involving payments by the Illinois Bell Telephone Company under the conventional license contract, and the language of Mr. Chief Justice Hughes was not only explicit in the rejection of the *laissez-faire* and the value standards, but also clearly indicated that the cost to the affiliated organization of supplying the service was pertinent in determining the reasonable-

⁵⁶ See *Southwestern Bell Tel. Co. v. Comm.*, 262 U.S. 276, 288-289 (1923). Quoted above at page 604.

⁵⁷ In *Houston v. Southwestern Bell Tel. Co.*, 259 U.S. 318, 323 (1922), the majority opinion accepted this thesis; and in the *New England Telephone Company* case, the Massachusetts Commission expressed the same sentiments. (P.U.R. 1925E, 739 [1925].)

ness of the intercompany payment.⁵⁸ Furthermore, it was recognized that the value of the service to the utility company is not an appropriate test of the reasonableness of intercompany payments; that is, the holding company is not justified in retaining for itself the entire advantage that arises from the performance of various managerial and construction services by specialized affiliates. It has not been judicially determined that the cost to the affiliated service company shall set the limit to the payment which the operating company may appropriately make.

The application of the cost standard—that is, the cost to the affiliated service organization—encounters practical difficulties. Most services are performed under conditions of joint cost, and the cost of the specific services performed for the particular subsidiary must always be subject to a more or less arbitrary apportionment of general expenses. The determination and apportionment of costs has not been considered with any finality by the judiciary; indeed, the problems of cost allocation are so peculiar to the particular company that judicial rules for cost determination can probably not be formulated.

If cost to the affiliated service organization has not yet been adopted finally by the courts as the only appropriate standard for judging the reasonableness of intercompany payments, some states have made the cost standard their statutory rule.⁵⁹ Where such statutory rules exist, commissions have ruled that payments in excess of the cost of performing such services are unlawful.⁶⁰ It is, of course, assumed that the cost to the affiliated organization of performing these services shall be reasonable; and if the utility company could perform the service for itself more cheaply or if the service could be obtained at a lower cost from another source, there would be *prima facie* evidence that the cost to the affiliated service company was not reasonable and that the charge was therefore unjustified.

It is significant that during the investigation by the Federal Trade Com-

⁵⁸ "Contentions of the appellants in this relation are directed to the purchases from the Western Electric Company and to the payments to the American Company under what is called its 'license contract.' . . . The state commission in laying the basis for its rate order made no finding as to the fairness of prices on such purchases. On the record in the suit, the court concluded that the City had failed to support its contention that the prices were exorbitant. The court said that it appeared for the past 14 years the average profit of the Western Electric Company on its total business had not been 'in excess of 7 per cent and never above 10 per cent.' That fact has evidentiary value but the finding does not go far enough. The Western Electric Company not only manufactured apparatus for the licensees of the Bell System but engaged in other large operations and it cannot be merely assumed or conjectured that the net earnings on the entire business represent the net earnings from the sales to the Bell licensees generally or from those to the Illinois Company. Nor is the argument of the appellants answered by mere comparison of the prices charged by the Western Electric Company to the Illinois Company with the higher prices charged by other manufacturers for comparable material, or by the Western Electric Company to independent telephone companies. The point of the appellant's contention is that the Western Electric Company, through the organization and control of the American Company, occupied a special position with particular advantages with relation to the manufacture and sale of equipment to the licensees of the Bell system, including the Illinois Company, that is, that it was virtually the manufacturing department for that system, and the question is as to the net earnings of the Western Electric Company realized in that department and the extent to which, if at all, such profit figures in the estimate upon which the charge of confiscation is predicated. We think there should be findings upon this point." (*Smith v. Illinois Bell Tel. Co.*, 282 U.S. 133, 152-153 [1930].)

⁵⁹ New York, Virginia, and Wisconsin.

⁶⁰ See *Re Port Chester Water Works*, 10 P.U.R. (N.S.) 89 (N.Y., 1935).

mission, a number of the holding companies voluntarily placed their intercompany contracts on a strict cost basis, in some instances through the organization of a mutual service company.⁶¹ The cost principle applies in the determination of the net investment cost under the Federal Waterpower Act of 1920.⁶² And as will subsequently appear, the cost standard, either through the use of mutual service companies or separately incorporated subsidiary service companies, is applicable under the Public Utility Act of 1935. Commission supervision of intercompany payments is required even where a mutual service company renders the services, for if the fees collected are in excess of the costs there will be an overstatement of operating expenses which will not be corrected by the return of the excess in the form of non-operating income.⁶³

The cost standard for intercompany payments does not limit service charges to the actual "costs" of providing the service. Presumably the capital of the service company is as much entitled to a fair return as the capital invested in the utility company itself. In the usual case, the allowance of a fair return on invested capital will not affect significantly the cost of service, for service affiliates typically operate with a capital which is quite small in relation to annual operating expenses.

Commission regulation of particular transactions. Commission regulation of holding-company transactions has now become firmly established, even though not all commissions have the statutory power to deal adequately with intercompany relations and some of those possessing competent authority have failed to exercise it fully. It is also quite generally recognized that the burden of proof as to the reasonableness of any intercompany payment must rest with the company and that the commission is justified in disallowing any intercompany payment where the cost to the holding company or affiliated service organization is not established.⁶⁴

Commission experience with intercompany payments has encountered certain difficulties. Almost without exception, commissions have been handicapped by an absence of satisfactory data with respect to the cost to the holding company or to its affiliated service organization, a deficiency normally beyond the power and competence of the state authorities to remedy. A second weakness is attributable to the fact that most commissions do not have the power to enjoin those payments which are not justifiable; the commission's authority is limited to "disallowing" those payments which appear to be improper. It has been noted above that in some states an attempt has been made to confer upon the commission or on the courts both the power and the responsibility to forbid those intercompany payments which are found unjustifiable, but the legal validity of these laws has not yet been determined by the highest court.

⁶¹ Commonwealth and Southern Corp. (*Moody's Public Utilities*, 1930, p. 1557); Buffalo, Niagara and Eastern Power Corp.; Columbia Engineering and Management Corp.; and South-eastern Power and Light Co. (*Utility Corporations*, No. 72-A, pp. 647, 640, 641.)

⁶² *Re Louisville Hydro-Electric Co.*, 1 P.U.R. (N.S.) 454 (F.P.C., 1923).

⁶³ *Re Mountain States Power Co.*, 19 P.U.R. (N.S.) 65, 69 (Or., 1936).

⁶⁴ *Re Louisville Hydro-Electric Co.*, 1 P.U.R. (N.S.) 454 (F.P.C., 1933); *Re New Rochelle Water Co.*, 20 P.U.R. (N.S.) 212 (N.Y., 1937).

(1) *Managerial and supervision fees.* Payments for managerial and supervisory services present three questions to the regulatory commission. First, is there a need for the services which the utility receives and is any payment for those services justifiable? Secondly, is the amount which the utility pays reasonable? And thirdly, is the basis for the calculation of such fees and payments equitable? Each question must be answered in the affirmative before a commission should approve an intercompany contract or permit an intercompany payment.

The first question, whether any justification exists for the intercompany payment, involves an inquiry into the nature of the services performed, the advantages that result from such services, and the extent to which the benefits are passed on to the operating utility and its consumers. It is now quite generally agreed that those who hold the control of utility companies should not exploit their strategic position for their own profit, or to phrase it positively, that the benefits arising from intercompany contracts should be shared with consumers and investors.⁶⁵ Clearly, where the utility company has its own staff of capable, efficient, and well-paid officers and where the managerial supervisors of the holding company act largely in the interests of the stockholders—that is, of the holding company that employs them—it is difficult to find justification for any payment.⁶⁶ Since the circumstances which may justify the payment to an affiliated management company are subject to change, the Commission must keep itself continuously informed with respect to the services performed. Even though the commission may initiate an investigation at any time, some commissions have preferred that such contracts should be for relatively short terms in order to present recurring occasions for their scrutiny.⁶⁷

The second inquiry seeks to determine whether the amount of the payment is reasonable. Until recently, payments were usually approved without criticism or qualification. In a few instances, commissions commented upon the desirability of the arrangement and the benefits which accrued to the operating company or noted that the management had been superior.⁶⁸ In the latter half of the 1920's, however, regulatory authorities became more critical and sought precise information with respect to the services performed and the reasonableness of the charges therefor.

The upper limit of the management fee which the commission could approve is, of course, set by the value of the service to the utility. Under no circumstances would the commission be justified in permitting the utility to pay more than it would cost the utility to supply the service or to obtain an equivalent service from an alternative source of supply.⁶⁹

⁶⁵ *Re Houghton Electric Light Co.*, P.U.R. 1924B, 32, 37 (Mich., 1923); *Re Louisville Hydro-Electric Co.*, 1 P.U.R. (N.S.) 454 (F.P.C., 1933); *Re Wisconsin Tel. Co.*, P.U.R. 1931E, 101, 117-119 (Wis., 1931).

⁶⁶ *Re Southwestern Tel. & Tel. Co.*, 8 Mo. P.S.C.R. 33 (1915); *Re Western States Gas & E. Co.*, P.U.R. 1924D, 681 (Cal., 1924); *Re Northwestern Electric Co.*, P.U.R. 1933B, 41, 56 (Or., 1932).

⁶⁷ *Re New Rochelle Water Co.*, 20 P.U.R. (N.S.) 212, 222 (N.Y., 1937).

⁶⁸ *Re Chesapeake & P. Tel. Co.*, P.U.R. 1916C, 925 (Md., 1916); *Re Mountain States Tel. & Tel. Co.*, P.U.R. 1917B, 198, 202 (Colo., 1917); *Re Colorado Springs Light, Heat & Power Co.*, P.U.R. 1916C, 464 (Colo., 1916).

⁶⁹ *Re Southern Bell Tel. & Tel. Co.*, P.U.R. 1932E, 207 (Ala., 1932); *Spector v. The Derby*

Since 1930 the cost to the service organization of supplying the managerial service has tended to become the standard by which regulatory authorities have judged the reasonableness of management fees.⁷⁰ Charges in excess of cost have been disapproved.⁷¹ But contracts calling for payments equal only to the cost of supplying an essential service have been readily approved.⁷² Of course the commission must assure itself that the costs of the affiliated service organization are reasonable and that the service company is itself efficiently and economically managed. The mutual service company would seem to be the answer to this requirement that services be rendered at cost, and in general, mutual service companies have been favorably regarded by regulatory authorities.

Thirdly, is the basis upon which the management fee is calculated equitable? Management fees have customarily been calculated at a percentage of the operating company's gross revenue. Long before intercompany payments became a critical issue in regulation, a majority of commissions had expressed dissatisfaction with fees based upon a percentage of gross revenue. Nevertheless, this basis of charge found acceptance in the federal courts.⁷³ Critics have contended that this basis must be arbitrary and unscientific and that it is, furthermore, susceptible of abuse. The percentage-of-gross-revenue charge appears objectionable because any increase in the gross revenue of the operating utility brings an increase in the management fee, whether or not there has been any corresponding increase in either the cost or the value of the services rendered.⁷⁴

(2) *Payments for intercompany purchase of commodities.* The purchase and sale of natural gas, more frequently than the intercompany transfer of electric energy, has provided the occasion for the assertion of commission authority with respect to wholesale commodity transactions. If the distributing companies only are subject to public regulation, there will be a tendency for the holding-company system to make its profits through the unregulated prices charged by the transmission or producing company. In the interests of

Gas & Electric Co., 13 P.U.R. (N.S.) 129 (Conn., 1936); *Re Northwestern Electric Co.*, P.U.R. 1933B, 41, 56 (Or., 1932).

⁷⁰ *Smith v. Illinois Bell Tel. Co.*, 282 U.S. 133 (1930).

⁷¹ *Re Port Chester Water Works*, 10 P.U.R. (N.S.) 89 (N.Y., 1935); *Re New Rochelle Water Co.*, 20 P.U.R. (N.S.) 212 (N.Y., 1937).

⁷² *Comm. v. Missouri Southern Pub. Service Co.*, 6 P.U.R. (N.S.) 269 (Mo., 1934); *Re Atlantic City Electric Co.*, 22 P.U.R. (N.S.) 175 (N.J., 1938); *Re California Oregon Power Co.*, 8 P.U.R. (N.S.) 412 (Or., 1934).

⁷³ *Houston v. Southwestern Bell Tel. Co.*, 259 U.S. 318, 323 (1922); *Southwestern Bell Tel. Co. v. Comm.*, 262 U.S. 276 (1923); *Southern Bell Tel. Co. v. Railroad Commission*, 299 Fed. 615 (E.D.S.C., 1923); *Chesapeake & Potomac Tel. Co. v. Whitman*, 3 F. (2d) 938 (D. Md., 1925); *Pacific Tel. & Tel. Co. v. Whitcomb*, 12 F. (2d) 279 (W.D. Wash., 1926); *Detroit v. Railroad Commission*, 209 Mich. 395, 177 N.W. 306, 308 (1920); *Comm. v. Mich. State Tel. Co.*, 228 Mich. 658, 209 N.W. 749 (1924); *Chesapeake & Potomac Tel. Co. v. Virginia*, 147 Va. 43, 136 S.E. 575 (1927).

⁷⁴ *Indiana Bell Teleph. Co. v. Public Service Commission*, 300 Fed. 190, 204 (D.Ind., 1924); *Re Indiana Bell Tel. Co.*, P.U.R. 1924A, 1 (Ind., 1923); *Re Missouri & Kansas Tel. Co.*, P.U.R. 1918C, 55, 76 (Kan., 1918); *Re N. E. Tel. & Tel. Co.*, P.U.R. 1926B, 247 (Me., 1925); *Re Chesapeake & Potomac Tel. Co.*, P.U.R. 1920D, 614 (D.C. 1920), P.U.R. 1920F, 417 (Md., 1920), P.U.R. 1920F, 49 (Va., 1920); P.U.R. 1921B, 97, 122 (W.Va., 1920); *Re Mich. State Tel. Co.*, P.U.R. 1923A, 30 (Mich., 1922); *Re N.Y. Tel. Co.*, P.U.R. 1925C, 767 (N.J., 1924).

the consumer, the doctrine has been established that the contractual terms negotiated between affiliated interests cannot be conclusive as to the fairness of price charged to the public utility.⁷⁵

The commission's jurisdiction operates directly with respect to the local company. Nevertheless, the commission may insist that the utility subject to its jurisdiction present the pertinent evidence with respect to the costs that are relevant to the wholesale rate which it claims as an operating cost.⁷⁶ In order to show satisfactorily all the evidence pertaining to the cost of supplying the commodity at wholesale, the utility may be compelled to establish the value of the property of affiliated companies, some of which are presumably beyond the territorial jurisdiction of the commission. These elaborate investigations indicate how imperfectly the system of state regulation is adapted to the complex intercorporate relations which are characteristic of the holding-company system, and how handicapped any agency must be where its jurisdiction is not coextensive with the regulatory problem. As in other applications of the cost standard to intercompany transactions, cost to the affiliated company presumably includes a fair return on the investment that is used by the affiliate in supplying the commodity at wholesale.⁷⁷

Regulatory authorities do not necessarily accept the cost to the affiliated organization as the appropriate charge any more than they would accept without critical inquiry the claims of the operating utility with respect to other operating expenses.⁷⁸

The complexities of proof with respect to the cost to the affiliated organization have led both the commissions and the companies to seek other standards for judging the reasonableness of intercompany payments. It has been suggested that the reasonableness of such payments may be judged by the sums which other utilities pay, but such comparisons are of little significance unless the particular utility may avail itself of the same terms. The mere showing that the charge is a customary one would not be sufficient to justify the payment made to an affiliated interest.⁷⁹

Transactions other than the supply of commodities at wholesale have raised questions as to the fair price in transactions between affiliated interests. Most such transactions come within the management contract, but a few instances have occasioned commission comment. Thus, charges for advertising were disapproved because no evidence was presented to justify the allocation of these expenditures to individual companies.⁸⁰ The payment of office rental to a parent company caused one commission to state that the appropriate test of reasonableness was not that rental which would permit the parent company a

⁷⁵ *Columbus G. & F. Co. v. Comm.*, 292 U.S. 398 (1934).

⁷⁶ *Western Distributing Company v. Public Service Commission of Kansas*, 285 U.S. 119 (1932); *Re Columbus Gas & Fuel Co.*, P.U.R. 1933A, 337 (O., 1932).

⁷⁷ *Columbus Gas & Fuel Co. v. Columbus*, 55 F. (2d) 56 (C.C.A. Ohio, 1931); *E. Ohio Gas Co. v. Comm.*, 133 Ohio St. 212, 12 N.E. (2d) 965 (1938); *Public Service Co. v. Billings Gas Co.*, P.U.R. 1933D, 337 (Mont., 1933); *Re Cities Service Co.*, P.U.R. 1933A, 113 (Kan., 1932).

⁷⁸ *Wichita Gas Co. v. Comm.*, 3 F. Supp. 722 (D. Kan., 1930); *Municipal Gas Co. v. Wichita Falls*, 9 P.U.R. (N.S.) 33 (Tex., 1935); *Re Boston Consol. Gas Co.*, 12 P.U.R. (N.S.) 113 (Mass., 1936).

⁷⁹ *Dayton P. & L. Co. v. Comm.*, 292 U.S. 290 (1934).

⁸⁰ *Re N.Y. State Elec. & Gas Corp.*, 20 P.U.R. (N.S.) 388 (N.Y., 1937).

fair return on its investment but rather the cost of securing accommodations in another building.⁸¹

(3) *Construction expenditures and the purchase of materials and supplies.* With the development of the holding-company system it became customary for the construction work to be undertaken by affiliated construction companies. Such intercompany transactions do not immediately affect the rates which are charged consumers, but these expenditures do enter into the investment of the utility and ultimately enhance the rate base.

The Federal Power Commission in its administration of the Federal Waterpower Act is charged with responsibility for determining the net investment costs of hydroelectric projects constructed under Federal license. In determining net investment costs, the Commission has been repeatedly confronted with the necessity of determining the cost incurred by affiliated construction companies. The allowable costs to the licensee company for construction work and other services are limited to the expenses actually incurred by the construction affiliate. And it is not enough to show that the prices charged by the construction company are no higher than those which would have been incurred by the licensee had the work been done elsewhere, for where the statutory standard is cost the market value of the services is not acceptable as a measure of the actual cost.⁸² Moreover, the payment by the utility licensee does not measure the cost of the project; and when the consideration is in securities, neither the par value of the securities issued nor their money value at the date of issuance has been accepted as a proper measure of the actual legitimate original cost.⁸³

The purchase of materials and equipment has also become significant in the regulation of intercompany transactions. A large proportion of the cases which have raised this issue have been concerned with the supply of telephone equipment to Bell companies by the Western Electric Company. In nearly all the early cases, the state commissions accepted the prices paid by the telephone companies for equipment and materials as reasonable and in the public interest, presumably because the prices of the Western Electric Company were less than those that would have been paid elsewhere for the same commodities.⁸⁴ While some recent decisions have continued to take this position,⁸⁵ the prevailing tendency has been to hold that the fairness of the price paid for equipment should be judged by reference to the specific cost and profits involved in making the particular equipment.

As in other determinations of the reasonableness of intercompany payments, complex evidence must be introduced in order to support a commission's findings as to the reasonableness of prices paid for equipment purchased from an affiliated manufacturing company. The interpretation of the cost data requires

⁸¹ *Mauston v. Mauston Tel. Co.*, P.U.R. 1933E, 161, 169 (Wis., 1933).

⁸² *Louisville Hydro-Electric Co.*, 1 F.P.C. 36, 39 (1933).

⁸³ *Clarion River Power Co.*, 1 F.P.C. 269, 277, 280 (1935). See also *Alabama Power Co.*, 1 F.P.C. 25, 39 (1932); *Lexington Water Power Co.*, 1 F.P.C. 430, 435 (1937); *Safe Harbor Water Power Corp.*, 1 F.P.C. 230, 235 (1935).

⁸⁴ *Re Southern Bell Tel. & Tel.*, P.U.R. 1931C, 833 (Ga., 1931); *Re N. E. Tel. & Tel. Co.*, P.U.R. 1925E, 739 (Mass., 1925); *Comm. v. Mountain States Tel. & Tel. Co.*, P.U.R. 1924C, 545 (Mont., 1924); *Re N.Y. Tel. Co.*, P.U.R. 1923B, 545 (N.Y., 1923) *Re Ohio Bell Tel. Co.*, P.U.R. 1931B, 46 (O., 1931); *Re Pacific Tel. & Tel. Co.*, P.U.R. 1922C, 248 (Or., 1922).

⁸⁵ *Re Customers of the New England Tel. & Tel. Co.*, 5 P.U.R. (N.S.) 333 (Mass., 1934).

a consideration of the position of the manufacturing affiliate in the industry, its efficiency of operation, and the advantages that accrue to the utility in buying from the affiliated organization rather than from an independent manufacturer. Even where a reasonably detailed investigation has served as the basis for a finding with respect to the reasonableness of intercompany payments, a further and more elaborate investigation may result in a questioning of the very assumptions upon which the finding of reasonableness was predicated.⁸⁶ The formulation of the principles governing intercompany transactions has not been accompanied by an equally prompt development of regulatory procedures and techniques to produce the objective data in accordance with which such principles should be applied.

(4) *The payment of dividends.* The present discussion is not concerned with the general principles of corporation law governing the payment of dividends. It is directed simply to an analysis of those issues raised by the improper declaration of dividends by public utilities at the behest of a holding company. The corporate law of most states provides that dividends shall be declared and paid only out of current net earnings or from earned surplus. A number of the states attempt to make their laws more rigid by adding that if the payment of dividends results in making the corporation insolvent or requires a reduction in the company's capital stock the directors shall be jointly and severally liable for the dividends improperly paid.⁸⁷ In only four states is the prior approval of the commission required for the declaration and payment of dividends.⁸⁸ In a few states, the commission is given statutory authority to forbid the declaration and payment of dividends that fail to conform to the statutory standard and which it judges to be contrary to the public interest.⁸⁹

A more rigid standard should govern the payment of dividends by public utilities than by corporations not "affected with the public interest." A utility has a primary obligation to the consuming public that must come ahead of its obligations to its investors. It must shape its conduct so that it will always be able to render adequate service and to secure new capital as required on favorable terms. Insistence on the utility's superior obligation to the community has been the basis of all the commission orders directed against the payment of dividends by public service enterprises.⁹⁰

INTERCOMPANY LOANS. *Loans by public utility companies.* "Up-stream loans," that is, loans by the operating utility to its holding company, are a perversion of what is assumed to be the normal relation between a holding company and

⁸⁶ Thus, following the instructions of the Supreme Court in *Smith v. Illinois Bell Tel. Co.*, 282 U.S. 133 (1930), the lower court to which the case was remanded made careful findings with respect to the costs and profits of Western Electric in the supply of telephone equipment to the Bell Companies, *Illinois Bell Tel. Co. v. Gilbert*, 3 F. Supp. 595, 602-603 (N.D. Ill., 1933); but these findings were quite opposite to those of the Federal Communications Commission in *Investigation of the Telephone Industry in the United States*, 76 C., 1 s., House Doc. No. 340, p. 587 (1939).

⁸⁷ Colorado, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Minnesota, Missouri, Montana, Nevada, New Mexico, New York, North Carolina, Oklahoma, Oregon, Rhode Island, Vermont, Virginia, West Virginia, Wisconsin, and Wyoming.

⁸⁸ Illinois, Kansas, Washington, and Wisconsin.

⁸⁹ New Jersey and Ohio, in addition to those states in which prior approval is required.

⁹⁰ *Ohio Central Tel. Corp. v. Comm.*, 127 Ohio St. 556, 189 N.E. 650 (1934); *Re Restriction in Payment of Dividends*, 3 P.U.R. (N.S.) 132 (N.C., 1934); *Re Northwestern Electric Co.*, P.U.R. 1933A, 493 (Or., 1932).

its subsidiaries. Even if there are no unfortunate results, utilities are not justified in using their credit and risking their funds in loan operations that have no relation to the rendition of utility services. Indeed, in some instances such up-stream loans have been accomplished without any formal action on the part of the officers and directors of the operating company. Heavy losses have been visited upon some operating utilities. Such losses fall directly or indirectly both on consumers and on outside investors and creditors of the utility, and interfere with the utility's discharge of its public duties. Up-stream loans should be prohibited rather than regulated.

Utility companies sometimes have idle funds which are normally carried as bank deposits or invested in short-term liquid loans. It might, therefore, seem appropriate for the holding company to borrow such funds from one utility for reloan to another or to arrange directly for a loan by one subsidiary to another. But from the viewpoint of the individual utility even such intercompany loans are questionable. The idle funds have presumably been accumulated for a definite corporate purpose—to meet maturing obligations, to make interest or dividend payments, to finance retirements, et cetera. To employ such idle funds in short-term loans is not only permissible but desirable. But it is also essential that the utility loaning its funds shall be in a position to enforce payment at the maturity of the loan, and such is not possible where the loan is to the holding company or to a subsidiary of the holding company. To loan idle funds within the system may deprive the creditor utility of its funds when its own need arises.

Despite the abuses associated with the up-stream loan and the almost universal criticism of such operations, few of the states have taken the obvious step and prohibited all such loans.⁹¹ A number of states provide that operating utility companies may loan their funds, either to parent companies or affiliated companies, only with the prior approval of the public service commission.⁹²

If loans by operating utilities are permitted, the only effective means of safeguarding consumers and investors lie in placing such loan operations under rigid commission control. After a loan has been made, it is often impossible for regulatory authorities to take any effective action to protect investors and consumers.⁹³ Where it has discretion with respect to loans, a commission should be most hesitant to approve loans by operating utilities either to holding companies or to other affiliated interests.⁹⁴

Utility borrowing from affiliated interests. Where the holding company loans its own funds to operating utilities, the public interest in the efficient con-

⁹¹ Statutory prohibitions of up-stream loans are in effect in Illinois (Ch. 111²§. Sec. 27 (h), *Smith-Hurd Illinois Statutes*) and Wisconsin (Sec. 196.525, 1939 *Statutes*).

⁹² Connecticut, Sec. 1414c (c)2, 1935 *Supplement to General Statutes of 1930*; Kansas, 66-1213 *General Statutes 1935*; Kentucky, Sec. 3594-24 *Baldwin's Revised Statutes of 1936*; Maine, Ch. 213, Sec. 38-A *Laws of 1930*; New Jersey, 48:3-7.2 *New Jersey Statutes Annotated*; New York, *Thompson's 1939 Laws of New York*, Public Service Law, Sec. 106; North Carolina, Sec. 1112 (17) *Code of 1939*; Oregon, 61-217, 1930 *Oregon Code*; Pennsylvania, Title 66, Sec. 1276 *Purdon's Penna. Stat.*; Virginia, Title 33, Sec. 3774, 1940 *Cumulative Supplement to Laws of 1936*.

⁹³ *Re Green Mountain Power Corp.*, P.U.R. 1932A, 130 (Vt., 1931); *Re Lowell Gas Light Co.*, P.U.R. 1933A, 460 (Mass., 1932).

⁹⁴ *Re The Peoples Natural Gas Co.*, 11 P.U.R. (N.S.) 20 (Penn., 1935); *Re Butler Suburban Water Co.*, 20 P.U.R. (N.S.) 327 (Pa., 1937).

duct of the utility may be prejudiced in two ways. First, if the utility obtains from the holding company the funds required for capital improvements and extensions, as has often been the case, then some of the control which the regulatory authorities exercise over the security issues of the utility loses its effectiveness. Where the utility proceeds with capital improvements on the basis of loans extended by its holding company, the commission is presented with a *fait accompli*; it can only decide whether the utility shall be permitted to issue securities to pay for expenditures already incurred.

Secondly, there is the possibility that even when the purpose of the loan is to provide the utility with working capital, the terms of the loan may be unreasonable. Holding companies, possessing the power to determine both the amount and the terms of the loan, have been known to impose interest charges that were not consistent either with the credit of the utility or with the relations that should prevail between a utility and its holding company.⁹⁵

Several states have prescribed commission supervision for all loan transactions.⁹⁶ The prior commission approval is quite generally required before loan contracts become effective; and in some states the commission is given power to terminate a loan which is found to be contrary to the public interest.⁹⁷ In the administration of these provisions, the commission has authority to ascertain whether the loan is related to the utility's public responsibilities, whether the rate of interest is reasonable, and whether the proceeds are applied to legitimate uses.

With the assertion of commission jurisdiction over intercompany loans, these matters have been less frequently discussed in the reported cases. The mere fact that such loan contracts must be submitted for commission approval has had a salutary effect upon the character of the loans. The few cases that have produced formal reports have involved criticisms of excessive interest rates,⁹⁸ or the refusal to approve loans where the operating company's need for cash was attributable to the past payment of excessive dividends and interest to the parent company.⁹⁹

AN APPRAISAL OF STATE REGULATION OF HOLDING COMPANIES AND INTER-

⁹⁵ *Re New York State Electric & Gas Corp.*, P.U.R. 1932E, 1, 5 (N.Y., 1932).

⁹⁶ Kansas, Sec. 66-1213, *General Statutes of 1935*; Kentucky, Sec. 3952-23, *Baldwin's Kentucky Statutes 1936*; Maine, Sec. 38-A, *Laws of Maine 1933*; Maryland, Sec. 378, *Flack—Annotated Code 1939*; Massachusetts, Ch. 164, Sec. 85, p. 2157, *General Statutes of 1932*; New York, *Pub. Serv. Law*, Sec. 106, *Thompson's 1939 Laws of New York*; Oregon, Sec. 61-201 *Oregon Code, 1935 Amendment*; Pennsylvania, Sec. 1272 and 1360, *Purdon's Penna. Statutes*; Virginia, Sec. 37741 *Code of 1936*; Washington, Sec. 10440-2, *Remington's Revised Statutes*; Wisconsin, Sec. 196.525, *1939 Statutes*.

Since loans are "contracts," all those commissions having jurisdiction over intercompany contracts generally are presumably competent to deal with loans.

⁹⁷ Kansas, Kentucky, Massachusetts, Pennsylvania, Virginia, Washington, and Wisconsin. In two states, utility officers responsible for unauthorized loans are subject to heavy fine; Wisconsin imposes a maximum fine of ten thousand dollars, and Massachusetts a fine of a thousand dollars or one year in prison.

⁹⁸ *New England Tel. & Tel. Co.*, 24 P.U.R. (N.S.) 1, 3-4 (R.I., 1938); *Comm. v. Edison Light & Power Co.*, 29 P.U.R. (N.S.) 75, 79 (Pa., 1939). In the first case, an interest rate of 4.2 per cent was said to be exorbitant and the multiplication of intercompany loans was criticized. In the second case, an interest rate of 7 per cent on intercompany indebtedness was condemned as excessive.

⁹⁹ *Re The Manufacturers Light & Heat Co.*, 25 P.U.R. (N.S.) 103 (Penn., 1938). See also *Re Latrobe Water Co.*, 26 P.U.R. (N.S.) 42 (Penn., 1938).

CORPORATE RELATIONS. A striking aspect of state regulation of holding companies in their relations with operating utilities is the inadequacy of the powers which have been delegated to the commissions and the relatively limited use which commissions have made of the powers at their disposal.

(1) Effective regulation of intercorporate relation is not possible solely through control over the operating utility; direct control over the holding company is essential. Even assuming that the states might successfully assert their jurisdiction over holding companies, on the theory that the identity of interests between the holding company and its subsidiaries justifies a disregard of the separate corporate entities, it is highly unlikely that state regulation of holding companies could be satisfactory. First, the state commissions seldom have the appropriations and staffs requisite for competent regulation of the local utilities, and it is unlikely that an expansion in their activities would be more adequately supported. Secondly, the lack of uniformity in the regulations which different states would impose on holding companies would soon lead to such confusion that the program would collapse.

(2) The acquisition and exercise of control over the local utility by the holding company could probably be brought under more effective regulation if the states would follow the example of the District of Columbia. The states could regulate the *exercise* of control, even though they might not be able to prevent individuals and corporations outside of their jurisdiction acquiring the securities of their local utilities. However, there should be assurance that combinations will proceed along rational lines in order to achieve the full economies that are potential in the centralized ownership and control of local utilities. Such supervision requires direct control over the acquiring corporation, with authority to forestall acquisitions which are without economic justification. There must also be effective control over the price at which holding companies acquire the securities of operating utilities.

(3) The regulation of intercorporate payments, and especially the determination of the reasonableness of the payments made by utility companies to service organizations, is dependent on the adequacy of the cost data which the regulatory agency is able to command from the affiliated organizations. The costs of the services depend upon the efficiency of the service affiliate, but the commissions can neither determine objectively whether the service company is operating with the maximum of efficiency nor take steps to enforce a higher level of efficiency. Only direct supervisory authority over the non-utility affiliates that perform the various services for the operating companies can solve the dilemmas posed by intercompany payments.

(4) As in the regulation of operating utilities, control over the accounting practices of holding companies and their affiliates is the foundation of all regulation of charges, expenditures, and security issues. The power to prescribe the accounts that shall be kept is the first step in securing accurate data on the basis of which to judge the reasonableness and propriety of intra-system payments, the reasonableness of the expenses incurred by holding companies and their service affiliates, and the soundness of the security issues and capitalizations of holding companies. Such accounting control involves the direct

regulation of the holding company in all its activities and is quite beyond the jurisdiction of the state commissions.

(5) The regulation of the security issues and capitalization of utility holding companies is essential to the welfare of the industry. The preceding discussion has shown three major abuses associated with the capital issues of holding companies: first, there has been gross stock-watering; secondly, the holding-company pyramids made all their securities extremely speculative; and thirdly, the sale of securities was sometimes accompanied by misrepresentation, deception, and manipulation. The financial excesses of the holding companies caused their operating subsidiaries to adopt policies that were detrimental to their financial soundness and seriously interfered with regulatory efforts to assure reasonable rates and charges. Yet the control of the security issues and the capitalization of holding companies is beyond the reach of state authorities.

(6) The states are without power to regulate the interstate transmission of electric energy and gas, or the wholesale price at which the interstate product is delivered to the local utility.¹⁰⁰ To an increasing extent since 1920, gas and electric utilities have engaged in the shipment of their products across state lines. Interstate operations had early caused the removal of much of the regulatory authority with respect to transportation and communications from the states to the federal government. A similar trend in the development of the electric and gas industries had long been apparent, and this tendency was accelerated by the growth of holding-company systems. While it does not appear that the electric utilities exploited interstate commerce as a device to defeat state regulation, the same cannot be said of the natural-gas utilities. From 1891 to 1934, there were twenty-two cases where natural-gas companies succeeded in defeating state regulation on the plea that it involved interference with interstate commerce.¹⁰¹ Only the federal government, with authority over interstate commerce, can assure the reasonableness of the wholesale rate charged by the interstate company to the intrastate operating utilities.

3. FEDERAL REGULATION OF HOLDING COMPANIES AND THEIR AFFILIATES

FEDERAL LEGISLATION. Holding companies and their affiliates in the electric and gas industries are subject to regulation under five federal statutes: the Federal Water Power Act of 1920, the Securities Act of 1933, the Securities Exchange Act of 1934, the Public Utility Act of 1935 (which is really two statutes—the Public Utility Holding Company Act of 1935 and the Federal Power Act of 1935), and the Natural Gas Act of 1935. The telephone companies and other communications companies are subject to the Communications Act of 1934. Other legislation applying to transportation companies and other utilities is beyond the scope of the present discussion.

THE SECURITIES AND EXCHANGE COMMISSION. The Securities and Exchange

¹⁰⁰ Chapter V.

¹⁰¹ *Utility Corporations*, No. 73-A, Appendix L-1, pp. 79-82.

Commission was established by the Securities Exchange Act of 1934. The statute provided for five commissioners to be appointed by the President, by and with the advice and consent of the Senate, for five-year terms. The Commission assumed the administration of the Securities Act of 1933, which had previously been enforced by the Federal Trade Commission, and organized the administration of the Securities Exchange Act of 1934, which provided for federal supervision of the national securities markets. In 1935 the Commission's sphere of action was further enlarged by the addition of extensive regulatory powers under the Public Utility Holding Company Act of 1935. Although the Commission has large responsibilities under seven different statutes, the present discussion will be confined to those activities which are pertinent to the conduct and regulation of holding companies. Thus the balance of the chapter will be concerned primarily with the Public Utility Holding Company Act of 1935, with passing reference to the pertinent provisions of the other statutes.

THE NECESSITY FOR FEDERAL REGULATION. The establishment of the far-reaching program of federal regulation of public utility holding companies came after ten years of continuous investigation of utility holding companies and their activities principally by the Federal Trade Commission, but also by other agencies of the federal government, including various committees of Congress. Elaborate studies preceded the drafting of the legislation.

There existed ample foundation for the declaration that public utility holding companies and their subsidiaries in the electric power and gas industries were "affected with a national public interest."¹⁰² The securities of these holding companies and their subsidiaries had been marketed on a national basis and were held by millions of investors. Contracts with respect to management, sales, construction, and other services were imposed on subsidiaries throughout the country. In increasing volume, holding-company subsidiaries were engaging in the interstate transportation and sale of natural gas and electric energy, and the prices charged in such transactions were becoming increasingly significant in the operating costs of the local utility companies. The practices of the holding companies in control of their subsidiaries influenced interstate commerce, the national financial markets, and the welfare of industrial and commercial areas extending over many states. Not only were the activities of the holding companies beyond the jurisdictional control of the states, but these activities were rendering state regulation of local utilities increasingly difficult, and in some respects, impossible. In declaring that the national public interest, the interest of investors, and the interest of consumers, required the establishment of federal control, Congress was able to present a bill of particulars with respect to those characteristics and activities of holding companies which were considered detrimental to the public interest.¹⁰³ The Public Utility Holding Company Act of 1935 was, therefore, aimed at meeting the problems and eliminating the evils that had become characteristic of the public utility holding company, but in order that the regulation might be effective, the statute sought to compel a simplification of

¹⁰² *Public Utility Holding Company Act of 1935, Sec. 1 (a).*

¹⁰³ *Sec. 1 (b).*

the holding-company systems, requiring the elimination of those units which were without economic justification.

THE ASSERTION OF FEDERAL JURISDICTION. The regulation of holding companies could conceivably be founded on the exercise of the right of Congress to control interstate commerce, on the exercise of the tax power, or on the rights of the government to control the use of the mails. The law as it was passed was based on the commerce power, with supplementary reference to the use of the mails.

Registration. To establish federal jurisdiction, all electric and gas holding companies which distributed any securities to the public subsequent to January 1, 1925, and which had any of those securities still outstanding in the hands of persons not resident in the state in which the holding company was organized were required to "register" on or before December 1, 1935. By defining the holding company in terms of the interstate distribution of its securities, the framers of the law selected the broadest base on which to bring holding companies under the statute.

For purposes of the statute, a holding company was defined as (A) "any company which directly or indirectly owns, controls, or holds with power to vote, 10 per centum or more of the outstanding voting securities of a public-utility company or of a company which is a holding company," and (B) any person found by the Commission to exercise, directly or indirectly, a controlling influence over the management policies of any public utility or holding company. The statute restricts the meaning of public utility to electric and gas companies.¹⁰⁴ In determining the scope of the statute, any one of the four circumstances—"ownership," "control," "holding with power to vote," or the "exercise of a controlling influence over the management or policies"—suffices to identify a holding company. In resolving questions as to the status of holding companies and subsidiaries, the Commission has held that conclusions "are to be determined by reference to realities and not by reference to legal abstractions."¹⁰⁵

The Act made it unlawful for unregistered holding companies to engage in any business in interstate commerce or to own any security of any subsidiary that engaged in interstate commerce. The statute specifically enjoined unregistered holding companies from doing all those things that were normal and indispensable to the operation of a public utility holding-company system: the holding company might not sell or transport gas or electric energy in interstate commerce; it might not negotiate or take any step in the performance of any service, sales, or construction contract; it might not, directly or indirectly, sell or distribute its securities or those of its subsidiaries in interstate commerce; and it might not acquire or negotiate for the securities or assets of any subsidiary or affiliate. And to make the prohibition complete, the holding company might not own the security of any subsidiary doing any of

¹⁰⁴ Sec. 2 (a), (5) and (7).

¹⁰⁵ *International Paper & Power Co.*, 2 S.E.C. 274, 277 (1937). See also *Rochester Telephone Corp. v. U.S.*, 307 U.S. 125, 145-146 (1939); *Natural Gas Pipeline Co. v. Slattery*, 302 U.S. 300 (1937).

the forbidden acts. In each instance, the use of the mails or any means or instrumentality of interstate commerce was forbidden to the unregistered holding company.¹⁰⁶ Faced with such a prohibition, the holding company was left with only two alternatives—to withdraw from business completely or to register and conform to the provisions of the Act.

Registration is accomplished by filing with the Commission a "notification of registration" and, subsequently a "registration statement." The information supplied is fundamental to the more positive powers of regulation contained in other sections of the Act, and it also serves an independent function of providing information previously unavailable and inaccessible to individual investors and regulatory authorities. Experience has demonstrated that many of the abuses that necessitated federal regulation are capable of correction by full disclosure of facts and adequate publicity, without the exercise of any coercive authority by public officials.¹⁰⁷ The registering holding company is required to supply the specified information with respect to its associate companies as well as with respect to itself.

The statute explicitly reserves the Commission's right to require such additional information as may be appropriate to the discharge of its responsibilities or to the attainment of the objectives of the statute.¹⁰⁸ A most important requirement is that the companies file consolidating balance sheets, income and surplus statements. The consolidating statement serves to reveal the financial interrelationships within the system; the individual statements of the registrants and each subsidiary must be presented separately, with explanations of the intercompany eliminations made in compiling the consolidated statement. Maps must be filed showing the areas in which service is rendered and the nature and location of various categories of physical properties. The companies are also required to file annual supplements to their registration statements, thus keeping the information on file current.

The registration statements are subjected to a careful examination by the

¹⁰⁶ Sec. 4 (a).

¹⁰⁷ The statute itself specified the minimum information that should accompany the registration statement: the charter or articles of incorporation, the by-laws, trust indentures, mortgages, voting-trust agreements; the nature of the business; the organization and financial structure of the corporation; a complete description of all outstanding securities; the terms of all underwriting agreements; the officers and directors of the companies, their remuneration, security holdings, and contracts with the corporation; all contracts not made in the ordinary course of business and specifically all service, sales, and construction contracts; bonus and profit-sharing arrangements, and options with respect to securities; balance sheets and income statements for not more than five years.

¹⁰⁸ The following information is representative of the subjects upon which the Commission has sought further enlightenment in the registration statements, the data being required with respect to both the holding company and its subsidiaries: "(1) general character of business; (2) analysis of balance sheet accounts including funded debt, capital stock and property; (3) revaluations of property; (4) intercompany holdings of securities and evidences of indebtedness issued by companies within the system; (5) investments in outside holding companies and public-utility companies; (6) interstate sales of electric energy and gas; (7) important leases; (8) important financing during the past five years; (9) distribution of capital stock of the registrant; (10) officers' and directors' other business affiliations, including connections with financial institutions; (11) loans to officers and directors; (12) interests of officers and directors in contracts to which the registrant or subsidiaries are parties; (13) compensation to officers, directors and highly paid employees; (14) important sales, service, construction and other contracts; and (15) litigation relating to franchises, orders of a State Commission or other governmental agency and other important matters." (3 Ann. Rep. S.E.C. 28 [1937].)

- Commission, and any deficiencies in the statements are called to the attention of the holding company for correction or amendment.

The registration of the public utility holding companies proceeded slowly, for many companies refused to register until the constitutionality of the requirement had been tested in the Supreme Court. This recalcitrant attitude was taken despite the assurance that the companies might register while reserving all their rights to challenge the validity of the Act. A year and a half after the date specified in the Act the registered holding companies constituted less than 45 per cent of the total number subject to the Act, and they controlled not more than 30 per cent of the assets of the holding-company systems. The decision of the Supreme Court in the *Electric Bond and Share Company* case,¹⁰⁹ March 28, 1938, upholding the constitutionality of the registration provisions of the Act, was followed by the prompt registration of the remaining holding companies. As of June 30, 1939, there were 142 registered holding companies, representing 51 separate public utility systems, and including 1,524 individual holding, subholding, and operating companies. The total consolidated assets of these companies, on a book basis, approximated \$14,097,000,000.¹¹⁰

Exemptions. The Public Utility Holding Company Act permits holding companies and subsidiaries to apply to the Commission for exemptions from the provisions of the Act. These exemptions may take various forms. A holding company or person may ask for a declaration that it is not a holding company.¹¹¹ A company may ask for a declaration that it is not a subsidiary of a specified holding company.¹¹² Upon a determination by the Commission that certain conditions prevail, a holding company,¹¹³ or a subsidiary company¹¹⁴ may be exempted by order from compliance with the Act. Finally, the Commission may, by rules and regulations, exempt specified classes of persons from the obligations that would be imposed upon them as subsidiary companies or affiliates.¹¹⁵

The Commission is instructed to grant the exemption only when it finds that the allowance of the exemption will not be inconsistent with the public interest or the interests of investors or of consumers. Where an application for exemption is filed in good faith, the company is automatically exempt pending the disposition of its application. The Commission may grant such exemptions unconditionally or it may impose conditions upon the granting and continuance of the exemption. It is customary to require the company to make periodic reports on its status and periodic reapplication for the continuance of the exemption. The statute reserves to the Commission the power to revoke any exemption if it appears to be detrimental to the public interest.

(1) A declaration that a company is not a holding company necessitates a finding by the Commission that the company (i) does not control a public utility or a holding company, (ii) that it is not an intermediary company through which such control is exercised, and (iii) that it does not exercise such a controlling influence over the management or policies of any public utility or holding company as to necessitate the imposition of the statutory

¹⁰⁹ 303 U.S. 419.

¹¹² Sec. 2 (a) (8).

¹¹⁰ 5 Ann. Rep. S.E.C. 63 (1939).

¹¹³ Sec. 3 (a).

¹¹⁴ Sec. 3 (b).

¹¹¹ Sec. 2 (a) (7).

¹¹⁵ Sec. 3 (d).

obligations in order to protect the public interest or the interests of investors or consumers. In making the requested declaration, the Commission may specify that the applicant must refrain from the exercise of voting rights, control over proxies, designation of officers and directors, and the creation or continuance of interlocking officers or directors.¹¹⁶

(2) A company may apply for a declaration that it is not a subsidiary of a specified holding company. A subsidiary company is defined by the Act as one having 10 per cent or more of its outstanding voting securities controlled, directly or indirectly, by a holding company or by a subsidiary of a holding company, or any person whose management or policies are found by the Commission to be subject of a direct or indirect controlling influence by a holding company.¹¹⁷ Before such a declaration can be granted, the Commission must find (i) that the applicant is not controlled, directly or indirectly, by such holding company, (ii) that the applicant is not an intermediary through which control over another company is exercised, and (iii) that the management and policies of the applicant are not subject to the controlling influence, either directly or indirectly, of the designated holding company. The usual basis for an application that a company is not a subsidiary of a specified holding company is the ownership of the applicant's stock by two or more holding companies. Where it is clear that one holding company is exercising control over the subsidiary, the way is open for finding that the applicant is not a subsidiary of another holding company;¹¹⁸ but where there are active relations and evidence of influence, the subsidiary may be held to be a subsidiary of more than one holding company.¹¹⁹

(3) The statute provides five grounds for exemption of holding companies and their subsidiaries under the Act:¹²⁰

(i) A holding company may be exempt if it, and every subsidiary from which it derives any material part of its income, is predominantly intrastate in character. The statutory terminology raises two queries—when is business “predominantly intrastate” and what constitutes a “material part of its income”—which can be answered only in the light of the facts and circumstances of the particular case.¹²¹ The first requirement is the more simple to determine. However, where good reasons exist for the presence of a subsidiary incorporated in another state—for example, compliance with a state law requiring the incorporation of public utility companies—this will not prevent the granting of the exemption. The second requirement, which frequently constitutes a stumbling block to exemption, involves two matters—the first concerns the interstate or intrastate character of the *companies* themselves, the second concerns the interstate or intrastate character of the *business* which

¹¹⁶ See *Allied Chemical & Dye Corp.*, 5 S.E.C. 151 (1939).

¹¹⁷ Sec. 2 (a) (8).

¹¹⁸ *Federal Light & T. Co.*, 5 S.E.C. 137 (1939); *Lehigh Power Securities Corp.*, 5 S.E.C. 143 (1939).

¹¹⁹ *Northern Natural Gas Co.*, 5 S.E.C. 228 (1939).

¹²⁰ Sec. 3 (a).

¹²¹ The Commission has paraphrased the statute to require “(1) that the applicant holding company and each of its public utility subsidiaries from which it directly or indirectly derives any material part of its income be organized under the laws of a single state, and (2) that the applicant holding company and every such subsidiary be predominantly intrastate in character and carry on their business substantially in a single state.” (*Washington Ry. & Elec. Co.*, 4 S.E.C. 191, 192 [1938].)

they conduct. Where the sole interstate activities of the holding company and its subsidiaries are only administrative incidents in the conduct of an otherwise intrastate business, the exemption is granted.¹²² But where there is regular intercourse between an out-of-state holding company and its essentially local operating companies, with capital being raised through the sale of holding company issues to the general investing public,¹²³ or where a subsidiary company carries on a substantial proportion of its operations in two states and engages in interstate exchanges of electric power,¹²⁴ the Commission is unable to make the necessary statutory findings and the exemption is denied.

(ii) A company may claim exemption as a holding company if it is predominantly a public utility company whose operations as a public utility do not extend beyond the state in which it is organized and the states contiguous thereto. This exemption was designed for the utility that was "a holding company only in form by reason of the fact that it has one or more minor subsidiary utilities."¹²⁵ Where the subsidiaries located in another state are not physically connected with the parent company,¹²⁶ or where a significant proportion of the company's income is derived from its subsidiaries,¹²⁷ the Commission denies the exemption. In most instances where an exemption has been granted, the gross operating revenues of the subsidiaries has not exceeded 10 per cent of the total for the system.¹²⁸

(iii) A company may be exempt if it is only incidentally a holding company, being primarily engaged in a business other than that of a public utility company.¹²⁹ Many corporations have holdings of stock in public utility or holding companies that would bring them within the formal definition of a holding company, yet their primary business may be mining, manufacturing, or finance. A number of oil companies have interests in natural-gas utilities to provide an outlet for the gas which is a by-product of their petroleum production. In addition to finding that the applicant is not significantly a public utility company, the Commission must find—first, that the applicant does not derive any material part of its income, either directly or indirectly, from subsidiaries that are operating as public utility companies;¹³⁰ or, secondly, that, although deriving a material part of its income from any one or more of such subsidiary companies, the applicant owns substantially all of the outstanding securities of such subsidiaries.¹³¹

(iv) A company may be exempt if it is only temporarily a holding company. The Commission may find that the company has acquired the securities in liquidation of a bona fide debt previously contracted or in connection with arrangements for the underwriting or distribution of securities. The

¹²² *Genesee Valley Gas Co.*, 3 S.E.C. 672 (1938).

¹²³ *Houston Natural Gas Corp.*, 3 S.E.C. 664 (1938).

¹²⁴ *Washington Ry. & Elec. Co.*, 4 S.E.C. 191 (1938).

¹²⁵ 74 C., 1 s., Senate Rep. No. 621, p. 24, and House Rep. No. 1318, p. 10.

¹²⁶ *Illinois Iowa Power Co.*, 4 S.E.C. 803 (1939).

¹²⁷ *Manufacturers Trust Co.*, 4 S.E.C. 845 (1939).

¹²⁸ *Ibid.*, 856.

¹²⁹ *Cities Service Co.*, Holding Company Act Release No. 2444 (1940).

¹³⁰ *Petroleum Corp. of America*, 2 S.E.C. 205 (1937); *Youngtown Sheet & Tube Co.*, 2 S.E.C. 873 (1937); *F. L. Putnam & Co.*, 2 S.E.C. 887 (1937); *Standard Oil Co. of California*, 4 S.E.C. 626 (1939).

¹³¹ *Consolidated Oil Corp.*, 2 S.E.C. 165 (1937); *Utilities Holding Corp.*, 3 S.E.C. 323 (1938).

Commission has by rule granted certain general exemptions in favor of banks with respect to securities acquired in the ordinary course of business.¹³² A similar general exemption has been granted by rule in favor of brokers and dealers whose holdings of securities are not beneficially owned by such person, or are held with the intention to resell in the ordinary course of business and have not been held for more than twelve months.¹³³ But where the securities are not held "temporarily," where they were deliberately acquired, and where the company takes an active part in the management of the utility subsidiaries, there obviously exists no basis for an exemption.¹³⁴

(v) A holding company will be exempt from the provisions of the Act if it owns no utility assets located within the United States, and if it derives no material part of its income from any subsidiary which is a public utility company operating within the country.¹³⁵

(4) A subsidiary of a holding company may apply for exemption if it is not a public utility within the United States and derives no material part of its income from any subsidiary public utility company operating within the United States.¹³⁶ In granting such petition the Commission usually requires that the company shall remain subject to the provisions of the statute in so far as any of its operations and transactions might have any influence upon operating public utilities within the United States.¹³⁷

(5) The statute permits the Commission by rule and regulation to exempt any specified class or classes of persons from the obligations which would be imposed upon them as subsidiary companies or affiliates. Thus the Commission eases the administrative burden and saves the costs and annoyance that would result if all such companies had to proceed with a formal determination of their status. The Commission has exempted any company which is a subsidiary of any company that has filed an application in good faith for an order declaring the applicant not to be a subsidiary of a specified holding company.¹³⁸ Subsidiaries subject to the jurisdiction of the Interstate Commerce Commission are also exempt by rule.¹³⁹ Small holding-company systems—those whose annual gross revenues are less than \$350,000 and the aggregate book value of whose assets is less than \$1,000,000—are exempt from compliance with the provisions of the statute.¹⁴⁰

Whenever it ceases to be a holding company, a company may apply to the Commission for a declaration that it is no longer in that category.¹⁴¹

"Control" is not an absolute barrier to exemption. The exercise of a "controlling influence" precludes the exemption only if that influence is likely to

¹³² Rule U-3. *Manufacturers Trust Co.*, 4 S.E.C. 845 (1939).

¹³³ Rule U-4. *Stone & Webster and Blodget, Inc.*, 3 S.E.C. 243 (1938).

¹³⁴ *Manufacturers Trust Co.*, 4 S.E.C. 845 (1939).

¹³⁵ Rule U-5. *Consolidated Cities L. P. & T. Co.*, 4 S.E.C. 965 (1939). Also *International Utilities Corp.*, 4 S.E.C. 786 (1939); *Middle West Utilities Co. of Canada*, 4 S.E.C. 1036 (1939).

¹³⁶ Sec. 3 (b).

¹³⁷ *New Brunswick Power Co.*, 3 S.E.C. 1051 (1938); *Great Northern Gas Co.*, 4 S.E.C. 89 (1938); *Southern Utilities Co.*, 4 S.E.C. 93 (1938); *Middle West Utilities Co. of Canada*, 4 S.E.C. 1036 (1939).

¹³⁸ Rule U-10 (b).

¹³⁹ Rule U-8.

¹⁴⁰ Rule U-9.

¹⁴¹ Sec. 5 (d). *International Paper & Power Co.*, 4 S.E.C. 873 (1939).

be detrimental to the public interest or to the interests of investors or consumers. The form that the "control" or "controlling influence" assumes is not critical. What is important are the consequences found, or to be anticipated, from the existence of the "controlling influence." If any of the evils against which the law is directed could follow from the existence of the "controlling influence," the company will be required to continue under the statutory obligations imposed on holding companies.¹⁴²

ACCOUNTS AND REPORTS. The purposes of accounting regulation and the principles applicable thereto have already been considered.¹⁴³ Here it is only necessary to note that the regulation of accounts constitutes the foundation for the Commission's control over holding companies and intercorporate transactions, just as it does in other phases of regulation. The statute imposes on all registered holding companies, every subsidiary, every mutual service company, and every affiliate of the foregoing,¹⁴⁴ as well as upon all persons performing service, sales, or construction contracts for public utility or holding companies, the obligation to keep "such accounts, cost-accounting procedures, correspondence, memoranda, papers, books and other records" as the Commission deems necessary or appropriate.¹⁴⁵ The Commission is not only authorized to prescribe uniform methods for the keeping of accounts, but it may also prescribe the manner in which specific transactions shall be recorded.¹⁴⁶ Furthermore, the statute provides that, subject to the rules and regulations of the Commission, all of the accounts and records prescribed shall be open to the inspection of interested parties—the representatives of investors, of consumers, or of companies with which transactions are had.¹⁴⁷

The Commission has prescribed uniform systems of accounts for registered holding companies and for service companies. Every registered holding company and every subsidiary, which is a public utility and which is not required to keep its accounts according to a system prescribed by the Federal Power Commission or a state commission, must conform to the Federal

¹⁴² See *H. M. Byllesby & Co. and The Byllesby Corp.*, 6 S.E.C. 639 (1940), for a discussion by the Commission with respect to the proper public policy in such matters.

¹⁴³ Chapter VIII.

¹⁴⁴ As defined by the statute, " 'Affiliate' of a specified company means—

"(A) any person that directly or indirectly owns, controls, or holds with power to vote, 5 per centum or more of the outstanding voting securities of such specified company;

"(B) any company 5 per centum or more of whose outstanding voting securities are owned, controlled, or held with power to vote, directly or indirectly, by such specified company;

"(C) any individual who is an officer or director of such specified company, or of any company which is an affiliate thereof under clause (A) of this paragraph; and

"(D) any person or class of persons that the Commission determines, after appropriate notice and opportunity for hearing, to stand in such relation to such specified company that there is liable to be such an absence of arm's-length bargaining in transactions between them as to make it necessary or appropriate in the public interest or for the protection of investors or consumers that such person be subject to the obligations, duties, and liabilities imposed in this title upon affiliates of a company."—Sec. 2 (a) (11).

¹⁴⁵ Sec. 15 (a), (b), (c) and (d).

¹⁴⁷ Sec. 15 (f), (g) and (h).

¹⁴⁶ Sec. 15 (f) and (i).

The Act contains the customary stipulation that it shall be unlawful to keep any accounts or records other than those prescribed or approved by the Commission, or to keep any accounts in any manner other than prescribed or approved by the Commission's rules and regulations.—Sec. 15 (e).

Power Commission's classification of accounts if it is an electric utility or to the system of the National Association of Railroad and Utilities Commissioners if it is a gas utility.¹⁴⁸

As a means of keeping the Commission informed, every registered holding company and every mutual service company is required to file with the Commission such periodic and special reports as may be prescribed by the regulatory authority.¹⁴⁹ Since one of the purposes of the statute and one of its regulatory devices is publicity, the Commission may make public any information filed with it where disclosure is judged to be in the public interest or in the interest of investors or consumers.¹⁵⁰

ACQUISITIONS OF SECURITIES AND UTILITY ASSETS. One grave abuse of the pre-regulation period was the competitive acquisition of properties at inflated prices, often with attendant profits to insiders. The purpose of federal policy, to seek an elimination of unnecessary and uneconomic holding companies and to bring about a simplification in the organization of the industry, requires that acquisitions of both securities and utility assets—whether by holding companies, by their subsidiaries, or by other persons that would become affiliates—be brought under the scrutiny of the Commission. To assure that new complications and abuses do not accompany the acquisition of securities and utility assets, and to promote, if possible, a development in the direction of a rational and economical organization of the industry have been two objectives of Commission activity.

To June 30, 1940, the Commission had received 310 applications looking toward the acquisition of securities, utility assets, and other interests. Two of these applications were denied; 200 were approved; 45 were withdrawn or dismissed; and 63 were pending at the close of the year.¹⁵¹ The Commission has not automatically denied those applications which did not, as originally filed, meet the statutory standards; wherever possible, an attempt has been made to evolve with the company officials and counsel an arrangement consonant with the public interest.

Statutory prohibitions. Some states have long had laws which have prohibited, or permitted only with the approval of the state regulatory authorities, the ownership or operation by a single company of the plants supplying both gas and electric service to the same community. The Public Utility Holding Company Act forbids the direct or indirect acquisition of gas and electric properties operating in the same territory if an applicable state law has not been fully complied with.¹⁵² This provision is consistent with a fundamental objective of the federal legislation, namely, to promote more effective state regulation, and to prevent companies from using the screen of interstate commerce as a means of evading and obstructing state control.

A main concern of the Act is with the acquisition of securities and utility

¹⁴⁸ Rule U-27.

¹⁴⁹ Sec. 14. The Securities Exchange Act of 1934 is followed in enacting that any person making any statement in any application, report, registration statement or document filed under the Act, which is false or misleading with respect to any material fact, shall be liable to damages in a suit by any injured party. (Sec. 16.)

¹⁵⁰ Sec. 22.

¹⁵¹ 6 Ann. Rep. S.E.C. 21 (1940).

¹⁵² Sec. 8.

assets by holding companies and their affiliates. No holding company, no subsidiary, and no person who is, or by virtue of the acquisition would become, an affiliate of any other public utility or holding company, may acquire "any securities or utility assets or any other interest in any business" without the approval of the Commission.¹⁵³

Acquisitions which are exempt. The terms of the statutory prohibition are quite broad and might uselessly burden the Commission with petitions for acquisitions having little or nothing to do with holding-company systems. The statute itself provides a number of exceptions to the requirement of Commission approval, and the rules and regulations adopted under the Act have further broadened the scope of the exemptions, permitting the Commission to concentrate its attention on those transactions in which a significant public interest is presented.

(1) The acquisition of utility assets by a public utility company is exempt if the acquisition has been expressly authorized by a State commission.¹⁵⁴

(2) The acquisition by a public utility of the securities of a subsidiary utility is also exempt if both companies are organized in the same state, and all other public utility companies in the same system are organized in that state, if the business of each company in the system is "substantially confined" to that state and if the acquisition has been expressly authorized by the state commission.¹⁵⁵

(3) Holding companies and their subsidiaries, like other corporations, have occasion to buy securities as a short-term investment for temporarily idle funds. No useful purpose would be served by subjecting these transactions to the detailed consideration of the Commission.¹⁵⁶

(4) Acquisitions by holding companies or subsidiaries in routine business transactions, the purchase of paper arising from the installment sale of appliances, and the relatively small acquisitions (\$100,000 or 5 per cent of gross annual revenue of the acquiring company, whichever is smaller) are exempt by rule.¹⁵⁷

(5) Non-utility subsidiaries engaged in the production of natural gas, oil, or sulphur are exempt with respect to acquisitions incidental to the specified operations.¹⁵⁸

(6) Any regulated water, telephone, common carrier, or other public service company is exempt with respect to acquisitions expressly authorized by a state commission provided the acquisition does not include any utility assets or securities of electric or gas utilities.¹⁵⁹

(7) The Commission has also granted exemptions with respect to the acquisition of securities by banks—if the bank is acting in a fiduciary capacity, accepts the security as collateral, or acquires the security in liquidation of a

¹⁵³ Sec. 9 (a).

¹⁵⁵ Sec. 9 (b) (2). From a consideration of the standards which the Commission has applied in similar matters, it would appear that the operations of each company would be "substantially confined" to a single state if not more than 5 per cent of its assets were located in other states and not more than 5 per cent of its revenues were realized from operations without the state.

¹⁵⁶ Rule U-40 (2).

¹⁵⁸ Rule U-49 (d) (1).

¹⁵⁴ Sec. 9 (b) (1).

¹⁵⁷ Rules U-40, U-41, and U-48.

¹⁵⁹ Rule U-49 (d) (2).

debt, if the security is non-voting, or if, after the acquisition, the bank will own less than 5 per cent of the outstanding voting stock of issuing corporation.¹⁶⁰

(8) Similarly any broker, dealer, or underwriter is exempt with respect to any acquisition for the account of customers or for underwriting and distribution.¹⁶¹

Commission approval of security acquisitions. The application for approval of security issues must disclose all the data essential to an informed judgment by the Commission.¹⁶² Before the Commission will even consider the application it must be apparent that any applicable state laws have been fully complied with,¹⁶³ except where compliance with the state law would be incompatible with the objectives of Section 11—the attainment of the “economical and efficient development of an integrated public utility system.”¹⁶⁴ Before granting its approval the Commission must be assured that the acquisition will not be inconsistent with the public interest or the interests of consumers or investors. The acquisition must not tend toward “interlocking relations or the concentration of control of public-utility companies, of a kind or to an extent that would be detrimental.” The consideration, including all fees, commissions, and other remuneration, must be reasonable and must bear a “fair relation to the sums invested in or the earning capacity of the utility assets to be acquired or the utility assets underlying the securities to be acquired”; and the acquisition must not unduly complicate the capital structure of the holding-company system.¹⁶⁵ The Commission must also find that the acquisition is in harmony with other sections of the law and their objectives. The acquisition must not interfere with the simplification of holding-company systems required by Section 11 of the Act, and affirmatively, the ac-

¹⁶⁰ Rule U-3 (b).

¹⁶¹ Rule U-4 (b).

¹⁶² The statute provides that the Commission shall require such information as is necessary or appropriate in the public interest or for the protection of investors and consumers, with respect to—

“(A) the security to be acquired, the consideration to be paid therefor, and compliance with such State laws as may apply in respect of the issue, sale, or acquisition thereof,

“(B) the outstanding securities of the company whose security is to be acquired, the terms, position, rights, and privileges of each class and the options in respect of any such securities,

“(C) the names of all security holders of record (or otherwise known to the applicant) owning, holding, or controlling 1 per centum or more of any class of security of such company, the officers and directors of such company, and their remuneration, security holdings in, material contracts with, and borrowings from such company and the offices or directorships held, and securities owned, held, or controlled, by them in other companies,

“(D) the bonus, profit-sharing and voting-trust agreements, underwriting arrangements, trust indentures, mortgages, and similar documents, by whatever name known, of or relating to such company,

“(E) the material contracts, not made in the ordinary course of business, and the service, sales, and construction contracts of such company,

“(F) the securities owned, held, or controlled, directly or indirectly, by such company,

“(G) balance sheets and profit and loss statements of such company for not more than the five preceding fiscal years, certified, if required by the rules and regulations of the Commission by an independent public accountant.

“(H) any further information regarding such company and any associate company or affiliate thereof, or its relations with the applicant company, and

“(I) if the applicant be not a registered holding company, any of the information and documents which may be required under Section 5 from a registered holding company.”—Sec. 10 (a) (1).

¹⁶³ Sec. 10 (f).

¹⁶⁴ Sec. 10 (c) (2).

¹⁶⁵ Sec. 10 (b) (1) (2).

quisition must tend toward the economical and efficient development of an integrated public utility system.¹⁶⁶

The Commission may prescribe such terms and conditions with respect to acquisitions as appear appropriate for the protection of the public interest or the interests of investors or consumers. The statute specifically suggests that the Commission may wish to designate the price at which the transaction shall be concluded, or that it may find it desirable to require the acquiring company to make a fair offer to purchase the securities of any minority stockholders.¹⁶⁷

The vast majority of all the security-acquisition cases formally decided have involved the acquisition of the securities of subsidiaries by parent companies. The problems have principally involved the acquisition of voting capital stock, both because the Commission is not so actively concerned where there is no increase in voting control, and because there is a tendency to sell non-voting securities to the investing public, most of the holding companies not having such excess funds as would permit them to supply all of the capital requirements of their subsidiaries. In general, any acquisition that promotes the economical development of efficient and self-sustaining operating units or systems has satisfied the test of "tending toward the economical and efficient development of an integrated public utility system."¹⁶⁸ The acquisitions of additional securities¹⁶⁹ of subsidiaries have commonly involved three situations:

(1) The acquisition of securities in a refinancing program may play an important part in enabling the subsidiary to replace securities carrying high interest rates with low-interest bearing securities, or preferred and common shares may be issued in place of fixed-interest bearing obligations. Such changes are obviously in the public interest, tending to improve the financial standing of the subsidiary and to enable it to serve at a lower cost.¹⁷⁰

(2) The most important group of cases has involved acquisitions by parent companies financing construction programs of subsidiaries. Such acquisitions may be thought to serve the public interest since the utility is enabled to render a more satisfactory service.¹⁷¹

(3) In a number of instances, holding companies have been permitted to increase their holdings in subsidiaries by the purchase of the latter's outstanding securities. While such transactions might seem to tend toward a concentration of ownership, the Commission has reasoned that a simplification in existing corporate structures results from making the subsidiary company wholly-owned, since it may not be necessary to consider the effect of any future reorganization on minority interests, and thus such acquisitions make it easier for parent companies to comply with the simplification requirements

¹⁶⁶ Sec. 10 (c).

¹⁶⁷ Sec. 10 (b) and (e).

¹⁶⁸ *Peoples Light & Power Co.*, 2 S.E.C. 829 (1937); *North American Co.*, 4 S.E.C. 434 (1939); *Community Power & Light Co.*, 6 S.E.C. 182 (1939).

¹⁶⁹ Other acquisitions tend to arise under the administration of Section 11, dealing with the simplification of holding-company systems.

¹⁷⁰ *Columbia Gas & Electric Corp.*, 3 S.E.C. 1098 (1938); *Iowa-Nebraska Power & Light Co.*, 5 S.E.C. 344 (1939); *Dakota Power Co.*, 5 S.E.C. 474 (1939); *California Public Service Co.*, 6 S.E.C. 368 (1939).

¹⁷¹ *Commonwealth & Southern Corp.*, 4 S.E.C. 217 (1938); *Community Power & Light Co.*, 4 S.E.C. 951 (1939); *Consumers Power Co.*, 6 S.E.C. 444 (1939).

of the Act.¹⁷² Indeed, in one series of cases, the Middle West Corporation was permitted to increase its investment in a subsidiary, the Central Illinois Public Service Company, upon the alternative hypotheses that if the subsidiary should continue in the system, the increased working control would make for the better articulation of the system, but that if the subsidiary should ultimately be divorced, the larger working control by the parent might be expected to make the divorce more practicable.¹⁷³

Acquisition of utility assets. The acquisition of utility assets by a registered holding company or a subsidiary company raises the same issues that are presented by an acquisition of securities, but the factual data on which the decision rests are ordinarily simpler and more objective. The data submitted to the Commission include not only the pertinent information respecting the assets and their value, but any information that would reveal an absence of arm's-length bargaining in the negotiations. As with security issues, the Commission's approval rests upon a finding that the acquisition will tend toward the "economical and efficient development of an integrated public utility system." Where the acquiring utility is already serving the territory,¹⁷⁴ where the acquiring company is already operating the plant as a part of its properties,¹⁷⁵ where the acquisition of all the assets of an associate company will improve the earnings ratio,¹⁷⁶ where lower operating costs will result,¹⁷⁷ or where conservation in drilling for natural gas will result,¹⁷⁸ there is an obvious basis for finding that the development of an integrated public utility system is furthered. The question of a reasonable price arises most acutely when arm's-length bargaining is absent, although even between independent parties there is the possibility of an exorbitant price.¹⁷⁹ The ultimate test of the reasonableness of the price should be the necessary investment in the property, at least such sum should be the maximum reasonable price, for in the case of a regulated enterprise a transfer of property should never become the basis for the assertion of a right to impose higher charges on the consumer. The protection of the consumer and the investor requires that the price shall bear a reasonable relation to the investment, but the value thus indicated should be controlling only where the established earnings indicate the propriety and prudence of the investment.¹⁸⁰ Other considerations may be involved in the Commission's decision: where property owned by an out-of-state utility is transferred to a domestic utility, effective regulation by state authorities be-

¹⁷² *Massachusetts Utilities Associates*, 2 S.E.C. 98 (1937); *Eastern Shore Gas Corp.*, 2 S.E.C. 571 (1937); *Lone Star Gas Corp.*, 3 S.E.C. 787 (1938).

¹⁷³ *The Middle West Corp.*, 2 S.E.C. 482 (1937), 2 S.E.C. 882 (1937), 3 S.E.C. 1007 (1938). See also *Consumers Power Co.*, 6 S.E.C. 444, 485-491, 510-519 (1939).

¹⁷⁴ *Fall River Electric Light Co.*, 1 S.E.C. 465 (1936).

¹⁷⁵ *Bellows Falls Hydro-Electric Corp.*, 2 S.E.C. 941 (1937).

¹⁷⁶ *Texas Utilities Co.*, 1 S.E.C. 944 (1936).

¹⁷⁷ *Duquesne Light Co.*, 7 S.E.C. 775 (1940).

¹⁷⁸ *National Gas & Electric Corp.*, 2 S.E.C. 110 (1936).

¹⁷⁹ *Texas Utilities Co.*, 1 S.E.C. 944 (1936); *National Gas & Electric Corp.*, 2 S.E.C. 110 (1936).

¹⁸⁰ In principle, the present consumers of the acquiring utility should not be burdened by the carrying costs of an uneconomical investment made to serve another group of consumers. If the acquisition price bears a fair relation to the earning capacity of the assets to be acquired and is not in excess of the reasonable investment, there is presumably no injury to the consumers of either company or to the investors in the acquiring corporation.

comes more feasible.¹⁸¹ It has also been indicated that the merger of two properties in the same holding-company system is not inconsistent with a finding that there have been no further interlocking relations or concentration of control detrimental to the public interest.¹⁸²

Acquisition of securities by the issuer. The Public Utility Holding Company Act establishes commission control over all acquisitions of securities by the issuing corporation.¹⁸³ The abuses of the holding companies which necessitated this provision, one of the most spectacular being the large-scale acquisition of their own securities on the organized exchanges as a means of driving their prices to artificial and fantastic levels, have been developed earlier.¹⁸⁴

Certain acquisitions are plainly without danger to the public interest and have been accorded a blanket exemption, if the acquisition is not from an associate company or an affiliate.¹⁸⁵ Securities may be redeemed in accordance with the terms of the indentures under which they have been issued. Acquisitions not exceeding 2 per cent of any class of indebtedness and retirements of securities at a cost not in excess of \$50,000 in any one calendar year are exempt as being too small to be significant.

Most of the acquisitions by the issuing corporation that have come before the Commission for formal approval have involved the calling of outstanding bonds for redemption, where the benefits to the company have accrued in the form of lower interest costs, lower sinking-fund requirements, and an easier refinancing program.¹⁸⁶ The Commission has approved an acquisition of some of the outstanding preferred stocks as favorable to both preferred and common stockholders and as tending to improve the financial position of the company;¹⁸⁷ and in another case, the corporate charter required the retirement of outstanding preferred stock with the proceeds from the sale of any capital assets.¹⁸⁸ In all of these transactions, in addition to its usual concern for the realization of the broad objectives of federal regulatory policy, the Commission has been specifically occupied with safeguarding the working capital of the company, with securing due and sufficient publicity when the corporation is purchasing its own stock, and with the fairness of the purchase price which might otherwise result in prejudice or preference of particular security holders at the expense of the remainder.

SALE OF PUBLIC UTILITY SECURITIES AND UTILITY ASSETS. The disposal of assets, whether in the form of securities or of utility assets and whether by registered holding companies or their subsidiaries, is under the supervision of the Commission, just as is the acquisition of securities or of utility assets. The Supervision aims to secure the public interest, the interest of investors (in both the selling and the acquiring company), and the interests of consumers, and to prevent any circumvention of the provisions of the statute. In order

¹⁸¹ *Fall River Electric Light Co.*, 1 S.E.C. 465 (1936).

¹⁸² *Texas Utilities Co.*, 1 S.E.C. 944 (1936).

¹⁸³ Sec. 12 (c).

¹⁸⁴ Chapter IV.

¹⁸⁵ Rule U-42.

¹⁸⁶ *Northern States Power Co.*, 4 S.E.C. 728 (1939); *Indiana & Michigan Electric Co.*, 5 S.E.C. 162 (1939); *Central States Power & Light Corp.*, 5 S.E.C. 868 (1939); *Southwestern Development Co.*, 5 S.E.C. 964 (1939).

¹⁸⁷ *Engineers Public Service Co.*, 4 S.E.C. 615 (1939).

¹⁸⁸ *American States Utilities Corp.*, 5 S.E.C. 309 (1939).

to assure itself on these matters, the Commission directs its inquiry to "the consideration to be received for such sale, maintenance of competitive conditions, fees and commissions, accounts, disclosure of interest, and similar matters."¹⁸⁹ If the sale is to an associate company, an even more searching inquiry is necessary into the price, the fairness of the terms to investors in both corporations, and the possible effects upon consumers. In many instances, the purchaser of the securities or the utility assets is also subject to the jurisdiction of the Commission and is under the necessity of securing the Commission's approval for the acquisition; customarily the two proceedings are consolidated into one.¹⁹⁰

Certain classes of sales of securities and assets are exempt by Commission rule from the necessity of submitting an application and securing formal approval. The sale of the securities of public utilities operating outside the United States is beyond the control of the Commission. Where the seller owns less than 10 per cent of the voting securities of a company, and also where the total sales for the class of security amount to less than \$100,000 in any year (provided in the latter case that the security is not a voting stock or is not a security of an associate company), the sales are exempt by rule. Small sales—those where the consideration or book value of the assets is less than \$100,000 and where the purchaser is not subject to the Commission's jurisdiction—are similarly permitted without formal approval. Finally, sales to the national or state governments or their political subdivisions are permitted without specific approval of the transaction by the Commission.¹⁹¹

The sales of utility securities have involved all classes of securities, and the methods of disposal, whether through private negotiation or through underwriters, have depended on the character of the transaction. The sale of common stock, especially where it carries control of the company, usually involves finding a purchaser who is interested in acquiring the entire block. Where the sale is of bonds or preferred stocks, unless the sale has been to institutional purchasers such as insurance companies,¹⁹² an underwriting of the issue is usual.¹⁹³ The reasons for the disposition of utility securities vary with the circumstances of the individual company: a step in meeting the integration requirements of the statute,¹⁹⁴ an unwillingness to make further investments in the property of the subsidiary,¹⁹⁵ or compliance with the request of another corporation as a means of securing a more favorable contractual arrangement.¹⁹⁶

The critical considerations in the Commission's approval of the transaction are the price at which the securities or assets are to be transferred and the commissions and other fees that are to be paid. In fairness to consumers, the price should not be in excess of the investment or cost; in fairness to investors, the price should not depart far from the capitalization of the earnings avail-

¹⁸⁹ Sec. 12 (d).

¹⁹⁰ Rule U-43.

¹⁹¹ Rule U-44. Certain exemptions with respect to sales to associate companies and affiliates are provided in Rule U-43.

¹⁹² *Inland Power & Light Corp.*, 5 S.E.C. 677 (1939).

¹⁹³ *The Middle West Corp.*, 4 S.E.C. 771 (1939).

¹⁹⁴ *Peoples Light & Power Co.*, 5 S.E.C. 461 (1939).

¹⁹⁵ *American Utilities Service Corp.*, 5 S.E.C. 880 (1939).

¹⁹⁶ *Northern Indiana Public Service Corp.*, 5 S.E.C. 239 (1939).

able to the securities or realizable from the assets. It is not clear from the Commission's determinations which interest—that of the consumer or that of the investor—is regarded as paramount. In general, the Commission looks with disfavor on the payment of any fee or commission to an affiliate or associate company or to any person where there may have been an absence of arm's-length bargaining.

INTERCOMPANY LOANS. The problem of "up-stream loans," that is, of loans by public utilities to their holding companies, has been met by an absolute prohibition, although the renewal or extension of outstanding loans is permitted.¹⁹⁷ Loans by holding companies to their subsidiaries are permitted only under the supervision of the Commission.¹⁹⁸ Such loans are possible only after a declaration by the lending corporation and an investigation by the Commission. Unless the Commission orders a hearing on such declaration, the loan may be made thirty days after the filing of the declaration. Even a capital contribution by a holding company is not allowed without compliance with the rules and regulations governing the extension of credit.¹⁹⁹ Declaration with respect to any extension of credit must disclose fully all the circumstances surrounding the transaction—the use to be made of the proceeds, the nature of the security or collateral (or the reasons for foregoing them if the loan is an open account), the maturity date, the interest rate, and all discounts, fees, and other charges connected with the loan, and why the transaction is in the public interest. The effect of the loan on the holding company and the need of the subsidiary—even when exempt from its jurisdiction—are considered by the Commission.²⁰⁰

SIMPLIFICATION AND INTEGRATION OF HOLDING-COMPANY SYSTEMS. When the Public Utility Holding Company Act became law in 1935, the holding-company system in the electric and gas utility industries was so intricate that effective regulation was impossible, so complex that investors could not accurately appraise the worth of their securities, so irrational that the potential economies of centralized operation and management could not be realized in practice, and so unnecessarily costly that the interests of consumers in low rates were prejudiced. In the interests of investors and consumers, and as a prerequisite to effective regulation, it was essential to provide for a simplification of the uneconomic complexities and an integration along rational engineering lines. Such a program of reorganization for the industry was required by Section 11, erroneously branded by the industry's publicity as the "death sentence."

A single integrated public utility system. As a standard, the statute requires that each holding-company system shall achieve geographical integration by limiting its operations "to a single integrated public utility system, and to such other businesses as are reasonably incidental, or economically necessary or

¹⁹⁷ Sec. 12 (a).

¹⁹⁸ Sec. 12 (b). The only exceptions which have been allowed by rule have concerned (i) the acquisition of a security issued by an associate company where the acquisition is exempt or has been approved, (ii) an extension of credit without interest for not more than one year where the debt arises from the performance of any service, construction, or sales contract or from the sale of electric energy or gas, (iii) emergency loans without interest, or (iv) limited advances without interest, not exceeding \$50,000. (Rule U-45.)

¹⁹⁹ Rule U-45.

²⁰⁰ *Northeastern Water & Electric Corp.*, 7 S.E.C. 931 (1940).

appropriate to the operations of such integrated public utility system.”²⁰¹ And an “integrated public utility system” for electric utilities is defined as one whose utility assets “are physically interconnected or capable of physical interconnection and which under normal conditions may be economically operated as a single interconnected and co-ordinated system confined in its operations to a single area or region, in one or more States, not so large as to impair (considering the state of the art and the area or region affected) the advantages of localized management, efficient operation, and the effectiveness of regulation.”²⁰² Other than the requirement with respect to “physical interconnection,” the specifications of the Act are only those which had for years been advanced by utility spokesmen as the principal advantages and the economic justification for the holding company.

The statute itself allows certain departures from the standard of a “single integrated public utility system.” With the approval of the Commission, a registered holding company may continue to control one or more additional integrated public utility systems provided three conditions are satisfied; namely,

“(A) Each of such additional systems cannot be operated as an independent system without the loss of substantial economies which can be secured by the retention of control by such holding company of such system;

“(B) All of such additional systems are located in one State, or in adjoining States, or in a contiguous foreign country; and

“(C) The continued combination of such systems under the control of such holding company is not so large (considering the state of the art and the area or region affected) as to impair the advantages of localized management, efficient operation, or the effectiveness of regulation.”²⁰³ As to the retention of non-utility businesses, the statute requires that they be “reasonably incidental, or economically necessary or appropriate” to the operations of the integrated public utility system, leaving the decision in the particular instance to the judgment of the Commission. In order to approve the retention of other business interests, the Commission must also find that it is “necessary or appropriate in the public interest or for the protection of investors or consumers and not detrimental to the proper functioning of such system or systems.”²⁰⁴

The Commission’s administration of the integration and simplification provisions has resulted in adding definiteness and concreteness to the general concepts employed in the statute. The three affirmative standards for an “integrated public utility system”—(1) physical interconnection or the possibility thereof, (2) operation as a single co-ordinated system, and (3) the securing of

²⁰¹ Sec. 11 (b) (1).

²⁰² Sec. 2 (a) (29) (A).

A “Gas Utility Company” is defined in terms of a company distributing gas at retail, thus excluding companies engaged in the production and transmission of natural gas. (Sec. 2 [a] [4].) An integrated public utility system for gas utilities is defined as a system consisting of companies “which are so located and related that substantial economies may be effectuated by being operated as a single co-ordinated system confined in its operations to a single area or region, in one or more States, not so large as to impair (considering the state of the art and the area or region affected) the advantages of localized management, efficient operation, and the effectiveness of regulation: *Provided*, that gas utility companies deriving natural gas from a common source of supply may be deemed to be included in a single area or region.” (Sec. 2 [a] [29] [B].)

²⁰³ Sec. 11 (b) (1).

²⁰⁴ Sec. 11 (b) (1).

the advantages of localized management, efficient operation, and effectiveness of regulation—have required little elaboration.²⁰⁵ The Commission has taken the position that the Act does not permit the combination of gas and electric utility properties into a single integrated system.²⁰⁶ Thus it would appear that gas and electric companies may be retained under common control only if one system of properties constitutes the principal “integrated public utility system,” while the other properties constitute an additional integrated system that may be retained in conformance with the “ABC standards” of Section 11 (b) (1).

In the interpretation of the integration provision,²⁰⁷ the Commission has built upon geographic integration as a foundation. The goal is the “single integrated public utility system.” A registered holding company is permitted to retain one or more additional integrated utility systems only if the “ABC standards” are satisfied. In the application of these standards, it has been the practice of the Commission not to consider whether a company satisfies all of the standards if it is apparent that it fails to satisfy any one of them. In its interpretation of the circumstances under which additional integrated utility systems will be permitted, the Commission has tended to rely primarily upon the geographic, or “B,” standard; and this standard has been interpreted to mean that a holding company may continue to control an integrated public utility system, or systems, additional to its principal single integrated public utility system only if all additional systems are located in the same state as the principal system or in adjoining states.²⁰⁸ Little occasion has arisen for the elaboration of standard “A,” that “each of such additional systems cannot be operated as an independent system without the loss of substantial economy”; however, it is apparent that in an ordinary situation the additional integrated utility systems will presumably be in a position to operate independently without the loss of substantial economy. And where each system has its own officers and is operated separately without any co-ordination of physical operations, and where the only common element of operation is the servicing of the companies by the same mutual service company, the Commission has indicated tentatively that the properties could not qualify for retention as additional systems.²⁰⁹ The relatively vague “C standard”—that “the con-

²⁰⁵ Sec. 2 (a) (29).

²⁰⁶ *Columbia Gas & Electric Corp.*, Holding Company Act Release No. 2477 (1941), and *United Gas Improvement Co.*, Holding Company Act Release No. 2692 (1941). In an earlier case, *American Water Works & Electric Co.*, 2 S.E.C. 972 (1937), where the Commission did find that the properties satisfied the requirements of Section 11 (c) and where it permitted the combination of gas and electric properties into an integrated public utility system, the gas operations were relatively unimportant; however, the subsequent opinions of the Commission have made it plain that this precedent is not to be followed.

²⁰⁷ Sec. 11 (b) (1).

²⁰⁸ *United Gas Improvement Co.*, Holding Company Act Release No. 2500 (1941); *Commonwealth & Southern Corp.*, Holding Company Act Release No. 2626 (1941). It had been argued that the provisions of subsection (B)—“All of such additional systems are located in one State, or in adjoining States, or in a contiguous foreign country”—should be interpreted to permit the retention of additional holding-company systems located at a distance from the principal integrated system. The Commission’s narrower interpretation, if adhered to, will make it much more difficult for holding-company systems to retain the scattered properties which were acquired in pursuit of “diversification.”

²⁰⁹ *Commonwealth & Southern Corp.*, Holding Company Act Release No. 2626 (1941).

tinued combination . . . is not so large . . . as to impair the advantages of localized management, efficient operation, or the effectiveness of regulation"—has the effect of imposing upon the holding-company system a relatively heavy burden of proof that the retention of the additional system will bring clearly marked advantages to the public and will not result in detriment to the consumer interest.²¹⁰ The Commission has suggested that it will be difficult to find that the advantages of localized management and the effectiveness of regulation are preserved where integrated utility systems are already operating on a statewide basis.²¹¹

The Commission's decisions have not made it clear what standards will be applied to determine whether integrated public utility systems shall be permitted to retain an interest in other businesses as "reasonably incidental, or economically necessary or appropriate to the operations of such integrated public utility system."²¹² While it would appear that it was the intention of Congress to permit the integrated holding-company systems to retain an interest in non-utility businesses, provided the Commission should find such retention "necessary or appropriate in the public interest or for the protection of investors or consumers and not detrimental to the proper functioning of such system," the Commission has interpreted the clause to permit the retention of an investment interest (an interest smaller than required to establish a parent-subsidiary relationship within the meaning of the statute) in utilities, as well as in non-utility businesses, although the statute might be interpreted to indicate that an interest in utility properties could be retained only where the properties were part of the principal integrated system or part of an additional integrated public system.²¹³

Simplification. The simplification of the corporate structure of holding-

²¹⁰ From the economic point of view, it may be questioned how far "localized management" is necessarily in the public interest. The development of the holding-company system did clearly result in an improvement in the management of many properties that would not presumably have occurred had all managerial functions continued to be exercised locally.

²¹¹ Thus in the tentative conclusions respecting the Commonwealth & Southern Corp. the Commission stated that it was unnecessary to discuss "whether the properties now owned and operated either by Consumers Power Co., Alabama Power Co., or Georgia Power Co., are as to any one of these respective states too large for localized management, efficient operation or effective regulation. We believe it suffices for the present purpose to reach the tentative conclusion that each of these state-wide areas either exceeds, or in any event approaches, the maximum size which can be so retained consistently with the statutory requirements. In this connection it may be observed that each of these three companies serves an area over the major part of the states served. Even within such areas it may be difficult to find that management can be localized, or to conclude that regulation can be effective over companies which dominate whole states." (Holding Company Act Release No. 2626 [1941].)

²¹² Sec. 11 (b) (1).

²¹³ "We must conclude that the two clauses in Section 11 (b) (1) which refer to the retention of other businesses, when taken together, mean that the Commission must permit the retention of other businesses including investment interests in utilities not subsidiaries, which are found to be reasonably incidental or economically necessary or appropriate to the operation of an integrated public utility system retainable under the control of the holding company, and that as to both investments in non-utilities and interests in non-utilities sufficient to create the statutory parent-subsidiary relationship, these standards may be met if the retention of the investments or other interests is found to be necessary or appropriate in the public interest or for the protection of investors or consumers and not detrimental to the proper functioning of such system or systems." (*United Gas Improvement Co.*, Holding Company Act Release No. 2692 [1941].)

In addition to the dubious status of investment interests in utilities not subsidiaries, it may be noted that the Commission, in its interpretation, employs the mandatory "must permit" for the

company systems, as well as their geographic integration, is required by the Public Utility Act of 1935. The Commission is instructed to require that each registered holding company and each subsidiary shall take steps to insure "that the corporate structure or continued existence of any company in the holding-company system does not unduly or unnecessarily complicate the structure, or unfairly or inequitably distribute voting power among security holders" of the holding-company system.²¹⁴ The "great-grandfather clause" stipulates that there shall not be more than two companies intervening between the top-holding company and the underlying operating companies.²¹⁵

This requirement is far from a "death sentence" for holding companies; indeed, it may be asked why the holding-company pyramid should extend beyond the parent company to the grandparent, for it is doubtful whether the second-degree holding company performs any function that cannot be as adequately performed by a first-degree holding company.²¹⁶

Procedures for the reconstitution of holding-company systems. There are three procedures by which the reorganization of public-holding company systems to conform to the statutory standards may be effected—through voluntary plans submitted by the managements of the holding-company systems,²¹⁷ through mandatory proceedings by the Commission,²¹⁸ or through proceedings arising in connection with the receivership and reorganization of holding companies.²¹⁹

(1) Voluntary plans. The statute provides that any registered holding company or any subsidiary, after January 1, 1936, may submit to the Commission a plan for compliance with the simplification and integration standards of the Act. These plans may involve a complete adjustment to the standards of the Act,²²⁰ or they may contemplate only a partial divestment of control, of securities or of other assets, through the payment of a partial liquidating divi-

permissive "may permit" language of the statute. See also *Engineers Public Service Co.*, Holding Company Act Release No. 2607 (1941).

²¹⁴ Sec. 11 (b) (2).

²¹⁵ The statute reads that each holding company "shall cease to be a holding company with respect to each of its subsidiary companies which itself has a subsidiary company which is a holding company." (Sec. 11 [b] [2].)

²¹⁶ The Commission may not require any change in the corporate structure or any dissolution of a company which is not a holding company or of any company whose principal business is that of a public utility company, except for the purpose of securing a fair and equitable distribution of voting power among the security holders. (Sec. 11 [b] [2].)

²¹⁷ *American Water Works & Electric Co.*, 2 S.E.C. 972 (1937); *Massachusetts Utilities Associates*, 3 S.E.C. 1 (1938); *Republic Electric Power Corp.*, 3 S.E.C. 992 (1938); *The North American Co.*, 4 S.E.C. 434 (1939); *Community Power & Light Co.*, 6 S.E.C. 182 (1939).

²¹⁸ *Electric Bond & Share Co.*, *Engineers Public Service Co.*, *The Middle West Corp.*, *United Gas Improvement Co.*, *Cities Service Power & Light Co.*, *Commonwealth & Southern Corp.*, *Standard Power & Light Corp.*, *North American Co.*, *United Light & Power Co.*, Holding Company Act Release Nos. 1944, 1945, 1950, 1953, 1954, 1956, 1957, 1960, and 1961, respectively (1940).

²¹⁹ *Peoples Light & Power Co.*, 2 S.E.C. 829 (1937); *Genesee Valley Gas Co.*, 3 S.E.C. 104 (1938); *United Telephone & Electric Co.*, 3 S.E.C. 653 (1938); *West Ohio Gas Co.*, 3 S.E.C. 1014 (1938); *Mountain States Power Co.*, 5 S.E.C. 1 (1939); *Utilities Power & Light Corp.*, 5 S.E.C. 483 (1939).

²²⁰ *American Water Works & Electric Co.*, 2 S.E.C. 972 (1937); *Community Power & Light Co.*, 6 S.E.C. 182 (1939); *United Light & Power Co.*, Holding Company Act Release No. 2636 (1941). See also *Columbia Gas & Electric Corp.*, Holding Company Act Release No. 2477 (1941).

dend or other action.²²¹ It has been the policy of the Commission to encourage the managements of the various holding-company systems to take full advantage of the voluntary procedure to submit their own plans for partial or complete compliance with the integration requirements. Most of the voluntary plans, however, have been of limited scope and have not looked to an immediate and complete adjustment.

(2) Mandatory proceedings to enforce simplification and integration. The Public Utility Holding Company Act imposed upon the Commission the duty of studying the corporate structure of every holding-company system and the relationships among the member companies, for the purpose of determining "the extent to which the corporate structure of such holding-company system and the companies therein may be simplified, unnecessary complexities therein eliminated, voting power fairly and equitably distributed among the holders of securities thereof, and the properties and business thereof confined to those necessary or appropriate to the operations of an integrated public utility system."²²² The application of the simplification and integration provisions became mandatory as of January 1, 1938. On August 3, 1938, Chairman Douglas addressed a letter to the chief executives of all registered holding companies, requesting them to inform the Commission as to their plans for compliance with these requirements. Most of the companies submitted more or less elaborate statements in response to this request, but the lagging pace finally forced the Commission to act under its power to enforce reorganization. This step was taken by the issuance, in the spring of 1940, of orders in quite general terms telling the companies that they were not integrated and setting a date for a public hearing with respect to the system.²²³

The responses of the holding companies were diverse. The Middle West Corporation assumed the burden of showing that its system did satisfy the integration requirements of the statute, thus leaving the Commission to disprove its contentions.²²⁴ A majority of the holding-company systems, following the lead of the United Gas Improvement Company, requested that they be furnished with a statement by the Commission specifying more particularly the considerations underlying the tentative conclusions that their system was not integrated.²²⁵ Although considering its notice adequate, the Commission undertook to prepare studies of the various holding-company systems indicating its tentative conclusions with respect to the composition of the single integrated utility system and to the properties and interests which should be divested.²²⁶

²²¹ *Penn Western Gas & Electric Co.*, 3 S.E.C. 280 (1938); *North American Co.*, 4 S.E.C. 434 (1939); *Peoples Light & Power Co.*, 2 S.E.C. 829, 836 (1937).

²²² Sec. 11 (a). See also Secs. 18 (a), 18 (b), and 30.

²²³ These orders were issued under Sec. 11 (b) (1).

²²⁴ *The Middle West Corp.*, Holding Company Act Releases Nos. 1949 and 2290 (1940); 7 S.E.C. 687 and 984 (1940).

²²⁵ *United Gas Improvement Co.*, 7 S.E.C. 341 (1940).

²²⁶ These reports were prepared by the Public Utilities Division and have been issued for the United Gas Improvement Co. (not dated), Engineer's Public Service Co. (Mar. 5, 1941), and Commonwealth & Southern Corp. (Mar. 10, 1941). See also *United Gas Improvement Co.*, Holding Company Act Release No. 2692 (1941), and *Engineers Public Service Co.*, Holding Company Act Release No. 2607 (1941).

(3) Proceedings arising in receivership and reorganization. The Commission is made a party to all proceedings involving the reorganization of a registered holding company or any subsidiary company.²²⁷ The Commission may serve as trustee, and the courts are instructed not to appoint any other person as trustee or receiver without notice to the Commission. Any reorganization plan must have the express approval of the Commission before it may be accepted by the courts, and thus there is afforded an opportunity to utilize reorganization for achieving conformity to the integration and simplification provisions of the Act.²²⁸ For example, in one instance where a quasi-reorganization and recapitalization of a top-holding company was proposed, the Commission suggested that the top-holding company should be eliminated, since it failed to meet the standards of the "great-grandfather clause." After a series of conferences, a plan was worked out for the shifting to subsidiaries of certain properties and obligations of the top-holding company and for the sale of some properties to other interests, the proceeds being applied to the payment of the obligations of the top-holding company; and the consummation of the plan involved the conversion of the top-holding company into a purely investment company.²²⁹

The progress thus far in the integration and simplification of holding-company systems has been relatively insignificant. One holding-company system has received final approval.²³⁰ Significant reorganizations to achieve some simplification and integration within the holding-company systems have taken place;²³¹ individual properties have been sold;²³² divestment of control has been effected by the distribution of subsidiary-company stock as dividends to stockholders,²³³ and by the sale of stock to the public through underwriters;²³⁴ stock in subsidiaries has been offered to holders of the parent company's notes and debentures;²³⁵ and holding companies have accepted programs for the disenfranchisement of the stock in their possession as a means of terminating control.²³⁶ The reorganizations that have thus far oc-

²²⁷ Sec. 11 (f).

²²⁸ The Commission also has jurisdiction over all fees and expenses associated with the reorganization. It is made unlawful for any person to solicit proxies or authorizations in connection with a reorganization plan unless the plan has been proposed by the Commission, or has been submitted to the Commission, and unless the solicitation is accompanied by the Commission's report on the plan. (Sec. 11 [f] and [g], and Rules U-62, U-63 and U-65.)

²²⁹ *United Light & Power Co.*, Holding Company Act Release No. 2636 (1941). See also *Utilities Power & Light Corp.*, 5 S.E.C. 483 (1939).

²³⁰ *American Water Works & Electric Co.*, 2 S.E.C. 972 (1937). Under the standards currently applied by the Commission, the American Waterworks and Electric system would probably not be approved.

²³¹ *Utility Service Co.*, 1 S.E.C. 966 (1936); *Engineers Public Service Co.*, 3 S.E.C. 580 (1938); *National Gas & Electric Corp.*, Holding Company Act Release No. 2385 (1940).

²³² *People's Light & Power Co.*, 5 S.E.C. 461 (1939); *American Utilities Service Corp.*, 5 S.E.C. 880 (1939); *United Light & Power Co.*, 6 S.E.C. 670 (1940).

²³³ *Penn Western Gas & Electric Co.*, 3 S.E.C. 280 (1938); *Washington & Suburban Companies*, 7 S.E.C. 256 (1940).

²³⁴ *Indianapolis Power & Light Co.*, 7 S.E.C. 36 (1940); *Cities Service Power & Light Co.*, Holding Company Act Release No. 2386 (1940).

²³⁵ *Standard Gas & Electric Co.*, 7 S.E.C. 1089 (1940).

²³⁶ *H. M. Byllesby & Co. and the Byllesby Corp.*, 6 S.E.C. 639 (1940); *Standard Power & Light Corp.*, 7 S.E.C. 596 (1940); *Standard Power & Light Corp.*, Holding Company Act Release No. 2369 (1940); *The United Corp.*, Holding Company Act Release No. 2596 (1941).

curred do not permit of any forecast concerning the quantitative results of integration and simplification, either with respect to the costs of service to the consumers, or the costs or benefits to the investors. And only the substantial fulfillment of the plan will provide a base for appraising its consequences for effective regulation.

SERVICE, SALES, AND CONSTRUCTION CONTRACTS. The role of the subsidiary service company or non-utility affiliate in the development and functioning of holding-company systems has already been described.²³⁷ And the problems thereby presented to state regulatory authorities by such intercompany contracts and payments have also been considered.²³⁸ The Federal Trade Commission's investigation of utility holding companies resulted in the formulation of the elements of a reform program: while admitting that centralized servicing achieved certain benefits, it was stated that regulation must conserve those benefits for the consuming public; it was therefore suggested that all service contracts should require the approval of regulatory authorities, that service be rendered at the cost incurred by the servicing company, and that the costs of the servicing company be subject to scrutiny to assure their bona fides.²³⁹ The principles of these reforms were incorporated in the Public Utility Act of 1935.

The establishment of federal regulation over holding companies and their subsidiaries has permitted a direct approach to the critical problems of intercorporate contracts and payments. Holding companies have been forbidden to perform service, sales, or construction contracts for any associate company which is a public utility or a mutual service company.²⁴⁰ These contracts may be entered into only by subsidiary service companies and mutual service companies, and only in accordance with the rules and regulations prescribed by the Commission.²⁴¹ All such contracts must have the prior approval of the Commission, which approval is forthcoming only if the services are performed economically and efficiently at cost, and only if the costs are equitably allocated among the associate companies.²⁴² Thus it appears that the non-profit service company is the ideal. The service companies must have their organization approved by the Commission, including a finding that there will be a reasonable saving to operating companies from having the services performed by the mutual or subsidiary service company rather than by an independent company.²⁴³ The Commission is authorized to prescribe a uniform system of accounts for service companies, to require reports, and to conduct investiga-

²³⁷ Chapter IV.

²³⁸ *Supra*, p. 641. See also Federal Power Commission, *Trial Examiner's Report on Metropolitan Edison Company of the Associated Gas & Electric Company System* (Aug. 27, 1940).

²³⁹ Federal Trade Commission, *Utility Corporations*, No. 72-A, pp. 657-670.

²⁴⁰ *Public Utility Act of 1935*, Sec. 13 (a).

²⁴¹ Sec. 13 (b).

²⁴² Secs. 13 (b), (c), and (d). See also Rules U-88, U-90, and U-91.

²⁴³ In practice, the Commission's procedure in determining whether a mutual company satisfies Section 13 (d) is substantially the same as the procedure used to determine whether a subsidiary or mutual service company satisfies the requirements of Section 13 (b). See, for example, *Republic Mutual Service Co.*, 1 S.E.C. 745, 747 (1936); compare with *Nepsco Services, Inc.*, 1 S.E.C. 589 (1936), *Columbia Engineering Corp.*, 3 S.E.C. 335 (1938), and *United Light & Power Engineering & Construction Co.*, 3 S.E.C. 894 (1938).

tions into their performance,²⁴⁴ and it is given parallel jurisdiction over independent service companies.²⁴⁵

To June 30, 1941, the Securities and Exchange Commission has approved the organization of 30 mutual and subsidiary service companies. Until 1940, it was concerned largely with the proposed methods of allocating costs among the companies to be serviced.²⁴⁶ In approving service companies, the Commission has simply stated that in its opinion the service would be performed at a saving in comparison with cost of similar services as furnished by independent companies.²⁴⁷ Cost of service has been defined to include a fair and equitable allocation of expenses, plus a reasonable compensation for necessary capital.²⁴⁸ The Commission has considered both the amount of the "necessary capital"²⁴⁹ and the necessary rate of return on the service company's working capital.²⁵⁰ In so far as possible, direct expenses and any other expenses capable of being allocated are charged to the operating companies for whose benefit the expenditures are made. The Commission has not yet determined that any one method of distributing unallocated overhead costs of the service company is to be preferred in all circumstances.²⁵¹

The service companies that have been organized under the Public Utilities Act of 1935 show marked differences in the number of services which they furnish to associate companies. A representative program is that of the Colum-

²⁴⁴ Secs. 13 (c) and (g), and Rule U-95.

²⁴⁵ Sec. 13 (f). The Commission does not appear to have exercised this power except to prescribe a system of accounts and to require reports from independent service companies. (Rule U-95.)

²⁴⁶ The Commission has thus far not been active in investigating the performance of the service companies to determine specifically what savings accrue to the operating utilities.

²⁴⁷ *Penn-Western Service Corp.*, 1 S.E.C. 562, 564 (1936). See also *Public Utilities Management Corp.*, 4 S.E.C. 45, 48 (1938); *Engineers Public Service Co.*, 4 S.E.C. 296, 300 (1938).

²⁴⁸ Rule U-91.

²⁴⁹ In *Ebasco Services, Inc.*, 7 S.E.C. 1056 (1940), the Commission recognized among the factors to be considered in determining the necessary amount of capital—the investment in the assets necessary for the business, the working-capital requirements in the light of average monthly expenses, the normal lag between expenditures and income, and the experience of comparable organizations. It was found that in 17 out of 19 cases, the ratio between working capital and average monthly expenses was not in excess of 2.5 to 1; the Ebasco ratio being 3.47, the company was ordered to reduce its working capital so that it should not exceed 2.5 times the monthly expenses.

²⁵⁰ In *Columbia Engineering Corp.*, 3 S.E.C. 335, 337 (1938), a return of 5 per cent on debenture notes held by the parent corporation was considered reasonable; *Nepsco Services, Inc.*, 1 S.E.C. 589, 590 (1936), paid 5 per cent on the debenture notes held by its parent; and *New England Power Service Co.*, 1 S.E.C. 615, 616 (1936), paid 4 per cent on an open account advanced from its parent. In *Ebasco Services, Inc.*, a return of 6 per cent was charged on working capital, but the Commission, on the basis of a comparison with 25 other service companies, ordered a reduction of the return to 4 per cent. The Commission pointed out that of 25 service companies, 13 paid no return whatever on their capital, 2 paid 4 per cent, 4 paid 5 per cent, 3 paid 6 per cent, and 3 paid 5 or 6 per cent on loans. At this time the subsidiaries of Electric Bond and Share were able to borrow in the open market at 2½ per cent. (Holding Company Act Release No. 2255 [1940].)

²⁵¹ In *United Light & Power Engineering & Construction Co.*, 3 S.E.C. 894, 896 (1938) unallocated expenses were to be distributed in proportion to direct salary charges; in *Columbia Engineering Corp.*, 3 S.E.C. 335, 337 (1938) overhead costs were distributed 50 per cent in proportion to operating expenses and 50 per cent in proportion to fixed capital; in *Republic Service Management Co.*, 1 S.E.C. 973, 974 (1936), unallocated expenses were distributed in proportion to the time spent by officers and employees for the associated companies; and in *Middle West Service Co.*, 1 S.E.C. 606, 608 (1936), such general expenses were distributed proportional to the gross revenues of the companies serviced. In *Ebasco Services, Inc.*, 7 S.E.C. 1056 (1940), a modified version of the gross-revenue method of allocating costs was accepted.

bia Engineering Corporation which was prepared to render the following services: "general executive, administrative and financial; accounting; statistical; corporate; tax; purchasing; insurance; auditing; commercial and general sales; rates; construction budget, automotive and safety; engineering; and stationery and addressing."²⁵²

The Securities and Exchange Commission has taken action to eliminate common officers and directors of service companies and holding companies.²⁵³ It has suggested that the existence of common officers and directors receiving salaries from two organizations may tend to violate the Act in two respects; first, it might appear that the holding company, through its officers, was rendering service to subsidiary utility companies, and secondly, the allocation of time by such common officers must, in many cases, be arbitrary. The Commission, therefore, ordered that holding companies pay all of the salaries of officers and employees, who are at the same time officers of the service company, or alternatively, that the common officers and directors sever their connections with one company or the other.

The contemporary service company is a quite different institution from that of the 1920's. It has ceased to be an instrument by which the holding company exploits its operating companies. The significant economies available through centralized servicing are being passed on to operating utilities and indirectly to consumers. It will require an investigation into the experience with service companies over a period of years to determine whether, under these new circumstances, the mutual and subsidiary service companies are operating with the maximum possible efficiency and economy.

THE ELIMINATION OF ABUSES BY THE "CONTROL." Among the unregulated holding-company systems there developed many abuses of control. Some abuses have been effectively dealt with by the general program of regulation previously described. Other forms of abuse that seemed susceptible of remedial action were the object of direct statutory provisions. Among the latter were those having to do with payment of dividends, the use of the proxy machinery by managements to perpetuate their own control, the speculation of officers and directors in the securities of their own companies, and the political activities in which holding companies and their subsidiaries sometimes engaged.

Dividends. Within the holding-company systems there was a tendency to pay dividends unjustified by the earnings of the underlying properties. Overcapitalization and pyramiding accentuated the problem by placing holding-company managements under the necessity of securing income sufficient to meet their obligations to investors. To guard against this evil the Public Utility Act of 1935 provided that no holding company and no subsidiary should declare or pay any dividend except in conformity to the rules and regulations promulgated by the Commission.²⁵⁴ Under the current rules, the payment of dividends is permitted only pursuant to a notification or declaration, which becomes effective thirty days after filing.²⁵⁵

²⁵² 3 S.E.C. 335, 336 (1938).

²⁵³ *Ebasco Services, Inc.*, 7 S.E.C. 1056 (1940); *United Light & Power Service Co.*, Holding Company Act Release No. 2608 (1941); *Middle West Service Co.*, Holding Company Act Release No. 2696 (1941).

²⁵⁴ Sec. 12 (c).

²⁵⁵ Rule U-46.

Proxies. The management or the control of any corporation, having the use of the proxy machinery without cost, is usually in a position to secure the assent of stockholders to any proposed program. Hence, no solicitation of proxies or authorizations in a reorganization of a registered holding company or any subsidiary may be made unless the reorganization plan has been submitted to the Commission and the solicitation is accompanied by the Commission's report on the plan.²⁵⁶ And no solicitation of an authorization regarding any security may be made except pursuant to a notice to the Commission, and no expenditures in connection with solicitations in excess of \$1,000 in any calendar year are permitted.²⁵⁷ The function of the proxy rule is to prevent those in control of the corporation and those willing and able to spend large sums of money in a proxy fight from using their superior economic power to win control by subjecting the stockholders to high-pressure methods or a barrage of appeals, data, et cetera.

Security operations of officers and directors. Accepted principles of business conduct require that the officers and directors of corporations shall not utilize any information which they possess by reason of their positions to speculate in the securities of the corporations which they manage. The Act of 1935 seeks to reinforce these principles of business conduct by stipulating that every officer or director of a registered holding company shall file with the Commission periodically a statement of his holdings of securities in the holding company or in any subsidiary.²⁵⁸ And to prevent any unfair use of information which the management may have, any profit realized by an officer or director from the purchase and sale (or sale and purchase) of any such security within a period of six months inures to, and is recoverable by, the company.²⁵⁹

Political activities and lobbying. The federal statute makes it unlawful for any registered holding company or any subsidiary to make any contribution in connection with the nomination, election, or appointment of any person to any federal, state, or other governmental office, or to make any contribution to any political party or committee.²⁶⁰ Without depreciating the importance of dealing with political activities that are concerned directly with the candidacy of any individual or with the activity of any political party, it should be noted that this provision does not reach political activities that affect both the utilities and the public even more directly—for example, proposals for the establishment of new public plants, where the opposition of utilities frequently develops abuses.²⁶¹

To cope with lobbying, the statute stipulates that it shall be unlawful for any person to be employed by a registered holding company or any subsidiary to advance or oppose any matter before any governmental agency or any

²⁵⁶ Sec. 11 (g).

²⁵⁷ Sec. 12 (e) and Rule U-65. The prohibition does not apply to ordinary expenditures in connection with preparing, assembling, and mailing proxies, and accompanying data. The rule became effective April 1, 1941.

²⁵⁸ Sec. 17 (a).

²⁵⁹ Sec. 17 (b).

²⁶⁰ Sec. 12 (h). See *Egan and Union Electric Co. of Missouri v. U.S.*, 137 F. 2 (d) 369 (C.C.A. 8, 1943). Certiorari denied 320 U.S. 788.

²⁶¹ See Federal Power Commission, Opinion No. 59, *Northwestern Electric Co. et al.* (1941).

member of the government, unless such person files with the Commission a statement of the subject matter of his activities, the nature and character of his employment, and the amount of the compensation to be received.²⁶²

²⁶² Sec. 12 (i).

REGULATION OF SECURITY ISSUES AND CAPITALIZATION

1. THE OBJECTIVES OF SECURITY REGULATION

THE RELATION OF SECURITY REGULATION TO OTHER ASPECTS OF CONTROL. The primary objective of utility regulation has been to assure adequate service at the lowest possible reasonable rates. The regulation of security issues was long considered an ancillary aspect of control undertaken primarily for the benefit of the investors. To the management of utility companies, the security regulation appeared as an impertinence, an interference in matters which were, or should be, beyond the jurisdiction of public authorities; and even the advocates of more effective regulation were often dubious as to the desirability of regulating securities lest the government be committed to permit earnings sufficient to support overcapitalized financial structures.¹ Indeed, even the Railroad Securities Commission's report in 1911 did not recommend an extension of federal supervision to the security issues and capitalization of railroads.² It was believed possible for regulatory authorities to insist upon adequate service and reasonable charges irrespective of the company's capitalization and security issues.

The modern attitude rests on the conviction that the control of security issues and capitalization constitutes a cornerstone of effective public utility regulation. The control of security issues is not simply a desirable aspect of public utility control, facilitating the exercise of commission authority in the direction of lower rates and better service; it is absolutely indispensable if the public is to be assured that the utility will be able to raise adequate capital funds at minimum costs.³

CAPITALIZATION AND RATES.⁴ The capitalization of a corporation may influence its rate policy either through the effects of capitalization and security issues upon the regulatory policy pursued by the commission, or through its effects on the corporation's policy with respect to rates and charges. The capi-

¹ Thus Mr. Sidney Dillon, president of the Union Pacific Railroad, wrote that "as a matter of reason and principle, the question of capitalization concerns the stockholders and the stockholders only. A citizen, simply as a citizen, commits an impertinence when he questions the right of any corporation to capitalize its properties at any sum whatever." ("The West and the Railroad," 152 *North American Review* 246 [1891], quoted in Bonbright, *Railroad Capitalization*, p. 15.)

Or as Senator La Follette stated in an editorial, the "government owes no other or different obligation to the man who buys railroad stocks or bonds, than to the man who buys Standard Oil and Tennessee Coal and Iron stocks and bonds, or to the man who purchases a horse, a house and lot, or a farm." (*La Follette's Weekly*, VI, No. 5, p. 2 [Jan. 31, 1914].)

² U.S., *Report of the Railroad Securities Commission*, 1911, pp. 38-39.

³ In a few states the significance of security regulation was appreciated at an early date and there the control of capitalization has long been an integral part of regulation. Massachusetts, a leader in this respect, has exercised control over security issues from the beginnings of the utility industries and has based its program of rate control thereon. See Barnes, *Public Utility Control in Massachusetts*, Ch. II.

⁴ For an excellent discussion on this subject, see Bonbright, *Railroad Capitalization*, pp. 14-38.

talization may influence the commission's determination of the rate base. Although it may not accept the outstanding capitalization as a measure of the rate base, the commission will almost inevitably be influenced by the knowledge that the corporation has certain interest charges and certain expectations with respect to dividends which must be met if the investment standing of its securities is not to be impaired. Thus either as a measure of value or through its influence on the commission's interpretation of other measures of value, the outstanding securities of the utility are likely to influence the rate base.⁵

Even if the commission is successful in preventing the capitalization from influencing the determination of the rate base, there is no possibility of preventing the corporate financial policy from having a predominant influence on the determination of the fair rate of return. If a corporation is to raise new capital on a competitive basis, the commission must permit earnings sufficient to make its securities attractive despite any failure of management to adhere to conservative standards of finance. By affecting the investment quality of a utility's securities, an excessive capitalization must necessitate a higher rate of return than would be required for a similar corporation that had followed conservative financial policies.

The capitalization of a corporation must influence the policies pursued by a corporate management. Outstanding securities create an expectation of interest and dividend payments, and the management is under pressure to meet that expectation. Thus an excessive capitalization may be expected to cause the management to adopt a short-run policy in order to maximize its profits, neglecting to provide adequate reserves for depreciation and foregoing the accumulation of a surplus. Or the management may refuse to make voluntary rate reductions, even though an increase in net earnings might be anticipated after consumers became accustomed to the new scale of charges. The management may even resist attempts by the regulatory authorities to impose rate reductions, insisting upon the highest possible rate base and carrying an appeal to the courts whenever there is a possibility of preventing the enforcement of an order reducing charges.

CAPITALIZATION AND SERVICE. The overissue of securities tends to have an adverse effect upon service, both deteriorating the quality of service and making it difficult or impossible for the company to improve service in response to consumers' demands. It is, of course, easier to allow service to deteriorate than to secure higher rates, when the utility wishes to meet interest and dividend payments: to secure higher rates requires the approval of regulatory authorities; but to secure a larger net income without an increase in rates requires only that management shall neglect to make proper provisions for depreciation and maintenance. The adverse effects upon service may not be immediate, but in the long run the utility is likely to face the necessity of making large capital replacements without having the reserves to cover the retirement of worn-out or obsolete equipment.

CAPITAL COSTS. To assure that capital costs are kept at a minimum requires supervision of the amount of security issues, the type of securities by which capital is secured, and the conditions of issuance and sale.

⁵ Capitalization as a measure of the rate base is considered in Chapter XI.

In the interests of limiting security issues to the minimum required to finance the utility, it is customary to restrict the purposes for which securities may be issued; normally, securities may be issued only for refunding outstanding securities or for financing capital expenditures which are necessary and proper. Furthermore, the company will normally be required to apply the proceeds of any security issue only to those purposes which have been approved.

To minimize capital costs it is essential that the utility be required to raise capital through the issuance of those types and classes of securities which will obtain the funds most economically. In this respect long-run, rather than short-run, consideration should govern; those securities and that particular capital structure should be selected which will tend to make the long-term costs of capital a minimum. The controlling consideration should be the overall costs of capital rather than the costs of capital on any particular issuance of securities, and the overall costs of capital will tend to be kept at a minimum if the company preserves a sound capital structure.

A part of the capital costs of a corporation is represented by the expenses incurred in the issue and sale of securities. Assurance of economy in the issuance and sale of securities may require that all issues be sold subject to competitive bidding by underwriters or that the regulatory authority pass judgment upon the reasonableness of the agreement between the issuing corporation and the underwriters.

THE FUTURE AVAILABILITY OF CAPITAL. Whether capital will be available in the future on favorable terms depends upon many considerations unrelated to the regulation of security issues. The adequacy of the company's earnings, the sufficiency of the provisions for depreciation, and the quality of the management are all factors which relate to phases of regulation that are not immediately associated with the control of security issues. But the future availability of capital also depends upon whether the company has followed a conservative financing policy. Regulation of security issues will therefore seek to assure that the total capitalization is not in excess of the net investment in the property, that the senior securities are protected by a cushion of assets provided through common-stock investment, that the fixed charges absorb only a safe fraction of the net earnings, or that the margin remaining after fixed charges is well in excess of any possible fluctuation in the net earnings of the corporation.

COMMISSION APPROVAL OF CAPITAL INVESTMENTS. Another objective which may be served by commission regulation of security issues is that of supervising the purposes for which capital funds are obtained. The commission's approval of new securities must presumably be preceded by a finding that the proceeds are to be used for proper capital expenditures and that no more securities are being issued than required to obtain the requisite funds. It is customary for the commission to require the utility to report at stated intervals after securities have been issued, indicating the sums expended for the various capital purposes approved by the commission's order.

PUBLICITY. The regulation of security issues also serves to provide adequate publicity in the interests of both the ratepayer and the investor. The mere fact

that regulation requires the presentation of certain essential data to a public authority is a disciplinary device, for a corporation will not undertake to issue securities for doubtful purposes when such a step would be attended by unfavorable publicity. The company may be required to submit such information as would be pertinent in enabling potential investors to appraise the new issue intelligently. Any improvement in the investment standing of utility securities, any reduction in the risks associated with investment in utility enterprises, will reduce the cost of capital and thereby benefit consumers.

2. CAPITAL REQUIREMENTS OF UTILITIES

In the earlier discussion of the economic characteristics of public utilities it was noted that the public utility industries, especially the electric and telephone companies, have experienced rapid growth. Something of that rapid growth is reflected in Table 13, which presents a summary of the security sales by classes and the construction expenditures for private electric companies from 1924 through 1938.⁶ While the total capital issues for the years 1924 through 1931 averaged substantially more than a billion dollars a year, a significant proportion of the issues were for refunding purposes, and in the period subsequent to 1932 a majority of the issues have been for refunding. However, during the period from 1924 through 1930, private electric companies alone required an average of approximately three-quarters of a billion dollars a year of new capital. It is especially notable that in the period since 1933 a very small part of the total construction expenditures has been financed from the proceeds of new capital issues; in part these funds have come from a reinvestment of the earnings of the operating companies (in some instances a reinvestment that was possible only at the expense of normal dividends to investors) and in part from funds supplied by holding companies. However, holding companies did not prove an important source of capital to their operating subsidiaries at the time when such financial assistance was most needed.

Table 44, "Securities Issued by Public Utilities," presents a summary showing all of the securities publicly offered by all utilities, plus those privately sold by registered utilities, for the period from 1935 to 1940. In this six-year period, security issues by utility companies aggregated slightly less than \$6,000,000,000. Approximately 95 per cent of the principal amount of the securities issued have consisted of debt—in principal amount the bonds constituting 82 per cent, the debentures 10 per cent, and notes 3 per cent. Preferred-stock issues accounted for 5 per cent of the total and common-stock issues for only $\frac{2}{10}$ of 1 per cent. In these six years it is clear that utility companies have not found it possible to improve their financial structure through equity financing. Some gains have been attained through funding of short-term indebtedness and the refunding of high-interest bonds by issues bearing low interest rates, as well as through capital contributions by holding companies and more conservative administration of income. In the years ahead it will be imperative for the industry to finance increasingly through common stock.

⁶ *Supra*, p. 45.

TABLE 44*
SECURITIES ISSUED BY PUBLIC UTILITIES
(Publicly Offered for All Utilities and Privately Sold for Registered Utilities)

Classification of Securities	Year 1935			Year 1936			Year 1937		
	No. Issues	Amount	Per cent	No. Issues	Amount	Per cent	No. Issues	Amount	Per cent
Bonds (Principal amount)	43	\$ 964,158,000	92.0	66	\$1,236,391,951	87.4	30	\$534,044,000	80.4
Debentures (Principal amount)	4	49,500,000	4.7	12	116,750,000	8.4	2	6,020,000	1.0
Notes (Principal amount)	—	—	0.0	4	13,890,000	1.0	7	35,650,000	5.4
Preferred stock (Stated or liquid value) ..	2	26,799,500	2.5	12	45,389,600	3.2	6	87,678,800	13.2
Common stock (Par or book value) ...	1	8,228,900	0.8	2	730,000	0.0005	1	11,835	0.00002
Total all issues	50	\$1,048,686,400		96	\$1,413,151,551		46	\$664,304,635	

Classification of Securities	Year 1938			Year 1939			Year 1940			Total 6 Years		
	No. Issues	Amount	Per cent	No. Issues	Amount	Per cent	No. Issues	Amount	Per cent	No. Issues	Amount	Per cent
Bonds (Principal amount)	37	\$681,457,000	69.3	47	\$621,982,000	69.8	43	\$759,336,000	87.0	266	\$4,797,368,951	82.0
Debentures (Principal amount)	9	239,730,095	24.4	8	155,750,000	17.5	4	40,750,000	4.7	39	609,400,095	10.0
Notes (Principal amount)	10	53,435,000	5.4	25	56,556,000	6.4	21	24,205,141	2.8	67	183,726,141	3.0
Preferred stock (Stated or liquid value)	6	8,890,900	0.9	11	55,643,600	6.3	16	51,441,300	5.9	53	275,843,700	5.0
Common stock (Par or book value)	—	—	0.0	—	—	0.0	2	5,514,810	0.6	6	14,485,545	0.2
Total all issues	62	\$683,502,995		91	\$889,931,600		86	\$881,247,251		431	\$5,880,824,432	

* Source: S.E.C., *Security Issues of Electric and Gas Utilities, 1935-1940*.

3. THE NEED FOR REGULATORY SUPERVISION

THE NATURE OF THE PUBLIC'S INTEREST. The character of the public's interest in security regulation, particularly as it relates to the principal objectives of reasonable rates and adequate service, has already been discussed. In the interest of assuring adequate service at the lowest reasonable cost, an attempt is made to assure that capital will be raised on economical terms and that the financial policy of the corporation, particularly with respect to its capital structure, shall be such as to assure that capital will be available in the future on favorable terms. The collateral aspects of security regulation, the assurance of due publicity, and the protection afforded to investors are also significant in keeping capital costs at a low figure. What remains to be emphasized here is the fact that the public interest is concerned not simply with the policy pursued by the individual utility company and the consequences of that policy for the particular company, but also with safeguarding the investment status of the entire industry; any circumstances which adversely affect the investment character of the securities of any particular utility or utility holding company tend to impair the investment quality of all utility issues and so to increase the cost of capital to all utilities. And finally, faulty capital structures render the entire economy more sensitive to the dislocations of the business cycle.

THE FAILURE OF LAISSEZ-FAIRE. The failure of *laissez-faire* methods with respect to utility financing may be catalogued in terms of the unfortunate consequences which have ensued. (1) The most obvious evil has been the excessive issue of securities. Stock-watering has been prevalent; securities have been issued without the receipt of equivalent assets by the corporation. (2) Unbalanced capital structures have, in many instances, handicapped utility financing, and unduly increased the cost of capital. (3) The overissue of securities has created expectations with respect to interest and dividend payments which have often forced the management to follow less than conservative policies in the administration of corporate income. The failure to meet dividend expectations always has an adverse effect upon the investment standing of the utility securities. But the payment of dividends when earnings are inadequate or when insufficient provision has been made for depreciation and retirement may result in an immediate impairment in the capital of the corporation and will certainly result ultimately in undermining the investment standing of its securities. (4) Abuses have been associated with the marketing of utility securities, especially where the utility has been under holding-company domination. Security issues have been accompanied by the falsification of accounts, the concealment of significant information, misrepresentation with respect to the purposes for which the proceeds are to be applied, and actual stock-market manipulation to create artificially the appearance of an investment demand for the security. (5) Despite the economic security of the utility industries generally (their protection against competition and the stability of their earnings), there have been too many failures and reorganizations, with attendant losses to investors and a deterioration in the investment standing of all utility securities.

4. COMMISSION JURISDICTION OVER SECURITY ISSUES

STATE CONTROL. *The scope of state regulation.* Since regulation of utility securities began with the state and since the scope of the regulation is dependent upon the powers which the legislature has delegated to the commission, a consideration of state regulation may properly begin with an examination of the statutory provisions with respect to commission jurisdiction over utility security issues. Although the period since 1929 witnessed a marked extension of regulation, the jurisdiction of the public service commissions as of 1939 did not include the regulation of security issues in a number of states, and even in those states where regulation of securities was established, commission control did not apply to all categories of utility companies. In thirteen states, no provision whatever has been made for the regulation of security issues,⁷ and in five states only the security issues of railroads are subject to commission control.⁸ Only thirty-one commissions are regulating the security issues of electric utilities.⁹

The historical conception of the regulatory problem. If regulation of security issues in the past has been something less than completely effective, the responsibility rests only in part with the legislature. Both commissioners and legislators conceived the problem to be simpler than it was in actuality. With the exception of the street railway, the various local utilities experienced steady and rapid growth until the temporary cessation of the 1930's. While utilities were expanding rapidly, all questions associated with the regulation of securities were colored by the fact that these corporations were constantly in need of additional capital. Commissions tended to focus their attention upon the amount of securities which the utilities sought to issue rather than on the forms of securities that were utilized in raising new capital; and it was considered that regulation had performed its function if utilities did not issue securities in excess of the amount required to finance their program of additions and betterments. Regulation was concerned essentially with the security issues and capitalization of the operating utility; the state commissions had no jurisdiction over holding companies, which were not considered to be public utilities, and which were for the most part incorporated in states where regulation was nonexistent. There was no clear understanding of the intimate relation between the financial policies and practices of the holding companies and the costs of capital to, and the operating expenses of, the local utility company. Commission supervision largely ignored such matters as the conditions and terms of issues; these were left to the discretion of the management, for it was not generally realized that holding companies might use their control for the purpose of profiting from the sale and distribution of operating companies'

⁷ Colorado, Delaware (no commission), Florida, Idaho, Iowa, Louisiana, New Mexico, Nebraska, Oklahoma, South Dakota, Utah, West Virginia, and Wyoming.

⁸ Minnesota, Mississippi, Montana, Nevada, and Texas.

⁹ Alabama, Arizona, Arkansas, California, Connecticut, District of Columbia, Georgia, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Missouri, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, Washington, and Wisconsin.

securities. Finally, state control took no effective steps to correct the results of past excesses in the capitalization of utility companies; regulation was confined largely to the supervision of current issues of securities, and new issues were approved even though the books and capitalization still reflected the stock-watering and write-ups of the past.

The general character of the statutory provisions. Most legislation begins with the statement that the issuance of securities by public service corporations is a "special privilege" which may be exercised only with the approval of the commission.¹⁰ The commission's jurisdiction usually extends to all classes of securities, stocks, bonds, the guarantee of securities of other corporations, and certificates of indebtedness.

The only *exemption* from the necessity of getting the prior approval of the commission is with respect to short-term certificates of indebtedness, and such short-term notes are commonly exempt only if they have a maturity of less than a year and only to the extent that the aggregate of the outstanding short-term notes is not in excess of some designated percentage, often 5 per cent, of the par value of other outstanding securities. In only ten jurisdictions are short-term certificates of indebtedness not exempt from commission jurisdiction.¹¹ The states are almost evenly divided with respect to their policy governing the refunding of short-term notes: some provide that no such notes may be refunded by another similar issue without the commission's consent;¹² while a somewhat larger number permit their refunding or renewal without commission approval, although the period that such unauthorized issues may be outstanding is usually limited, commonly to five years.¹³

Wide variations exist among the states with respect to the detail with which the *procedure* of security regulation is defined. In some statutes there is nothing more than a very general authorization to the commission to adopt such procedures with respect to hearings and investigations as appear necessary or desirable. In other states, the statutes prescribe in detail both the form of application that shall be used in petitioning for commission approval and the procedures which the commission shall observe and the findings which it must make. In all, some twenty-five states have statutes which specify the findings which are requisite before the commission may approve any petition for an issuance of securities.¹⁴ The usual statutory directions with respect to *the findings* which the commission must make are couched only in general terms.

The purposes for which utilities may issue securities are commonly enumer-

¹⁰ See California, *Laws of 1937*, Act 6386, Sec. 52 (a).

¹¹ District of Columbia, Minnesota, Mississippi, Montana, Nevada, New Jersey, New Mexico, Tennessee, Texas, and Wisconsin.

Where short-term certificates of indebtedness are exempt, the more progressive statutes require that the utility shall file with the commission a notification of all short-term notes sold.

¹² Connecticut, District of Columbia, Massachusetts, Minnesota, Mississippi, Montana, Nevada, New Hampshire, New Jersey, New Mexico, Oregon, Pennsylvania, Rhode Island, Tennessee, Texas, Vermont, and Wisconsin.

¹³ Alabama, Arizona, Arkansas, California, Georgia, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Michigan, Missouri, Nebraska, New York, North Carolina, Ohio, South Carolina, Virginia, and Washington.

¹⁴ Alabama, Arizona, Arkansas, California, Georgia, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Missouri, Nebraska, New Hampshire, New York, North Carolina, Oregon, Rhode Island, South Carolina, Texas, Vermont, Virginia, and Wisconsin.

ated in the statutes. Thus the Missouri statute provides that a utility may issue securities "when necessary" (1) for the acquisition of property, the construction, completion, extension, or improvement of its plant or distributing system, (2) for the improvement or maintenance of its service, (3) for the discharge or lawful refunding of its obligations, or (4) for the reimbursement for moneys actually expended from income, or from any other moneys in the treasury of the corporation not secured or obtained from the issue of stocks, bonds, notes, or other evidence of indebtedness of such corporation.¹⁵

More than half of the states have placed statutory limitations upon the amount of securities that may be issued by public utilities.¹⁶ Of the general limitations, the most common are those which stipulate that the amount of securities to be issued shall not exceed the amount which is reasonably required for the purposes specified in the commission's order, and it is customary to forbid utility companies to capitalize franchises, contracts, or other rights in excess of the amount paid for them to the state or to one of its political subdivisions. In the past, statutory limitations upon the issue of indebtedness, limiting the aggregate outstanding indebtedness to some percentage of the capital stock of the corporation, have been included in a number of statutes.¹⁷ The Indiana statutes are perhaps the most elaborate: the aggregate amount of preferred stock and indebtedness may not exceed 75 per cent of the total capitalization of the corporation; and the commission is instructed to consider, before approving any issue of securities, the total outstanding capitalization of the utility in relation to the total value or investment in its property, as well as the character and proportionate amount of each kind of security, and any unamortized discounts applicable to outstanding securities.¹⁸

A *merger, consolidation, or reorganization* always occasions an issue of securities. In general, the same principles and procedures govern such issues as prevail with respect to any other security issues. However, certain states have given their commissions added powers with respect to mergers.¹⁹ The most frequently encountered statutory provision specifies that the securities issued to effect a merger or consolidation shall not exceed the aggregate capitalization of the constituent companies, plus any additional investment that is made at the time of the merger.²⁰

¹⁵ Missouri, *Revised Statutes*, 1929, Sec. 5196.

¹⁶ Arizona, Arkansas, California, Connecticut, Georgia, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Missouri, Nebraska, Nevada, New Hampshire, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Texas, Virginia, Washington, and Wisconsin.

¹⁷ For the history of these provisions in the Massachusetts statutes, see Barnes, *Public Utility Control in Massachusetts*, pp. 63-68.

¹⁸ Indiana, *Laws of 1933*, Ch. 190, Secs. 7 (a) and 8.

¹⁹ Alabama, California, Connecticut, District of Columbia, Illinois, Indiana, Maine, Maryland, Massachusetts, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New York, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, Vermont, and Virginia.

²⁰ The Ohio statute is somewhat more specific in stipulating that the aggregate debt of the consolidated company shall not be increased by the merger. (Ohio, *Page's General Code Annotated*, Sec. 614-59.) California requires that any merger or consolidation shall be accompanied by a reorganization of the utility's capital structure if such is in the public interest. (California, *Deering's General Laws*, Act 6386, Secs. 51 and 52 [1937].) It is, of course, desirable that the securities issued in the merger or consolidation of utility companies should not exceed the proper value of the utility's assets; yet only the statutes of Indiana and Pennsylvania provide that the

It is customary for the statutes to require, or for the commission to require as a condition of its approval if the statute is silent, that the *application of the proceeds* of any issue shall conform to the purposes approved in its order.²¹

Appraisal of state control over securities. No statistical demonstration is necessary to support the conclusion that state regulation of the securities issues and capitalization of utility companies has been a failure; indeed, such success as has been attained by individual states only serves to emphasize the magnitude of the failure generally. If any factual evidence be needed to support this conclusion, it may be drawn from the record of the financial excesses of the holding-company systems in the 1920's and the financial distresses of both holding and operating companies in the 1930's.

The circumstances which account for the record of failure are equally apparent, although there may be some difference of opinion as to the quantitative responsibility of the different factors. First, there existed no regulation at all in a substantial proportion of the states. Secondly, many states which did attempt a regulation of security issues did not confer adequate statutory powers upon their commissions. Thirdly, the commissions, operating with small staffs and limited budgets, have been unable to make the thorough investigations which should precede the granting of a petition for security issues, and hence such applications have often been handled as routine matters. Fourthly, the holding companies, which have been the chief offenders against sound financial principles, have been completely beyond the reach of state regulation and were wholly unregulated until the assertion of federal authority in the Securities Act of 1933. And finally, there has been insufficient emphasis on the need for remedial action to correct the past errors in financial management.²²

FEDERAL REGULATION. Federal regulation of the security issues and capitalization, of both operating and holding companies, was forced by the abuses associated with holding companies and with the absence of regulation by many of the states. In reciting the reasons necessitating federal regulation of holding companies, the Public Utility Act of 1935 enumerated the abuses relating to security issues that required correction: that investors lacked the information necessary to appraise the financial position or earning power of utility companies; that in many instances securities were issued without the approval or consent of any state authority; that securities were issued on the basis of fictitious or unsound asset values and were unrelated to the sums invested in, or the earning capacity of the properties, being based upon paper profits arising from intercompany transactions or the anticipation of excessive revenues from operating companies; and that subsidiary public utility com-

commission shall determine the valuation of the consolidating companies' properties, while the South Carolina statutes make the valuation established by the companies subject to the scrutiny of the commission. (Indiana, *Burns' Indiana Statutes*, 1933, Sec. 54-506 and Sec. 54-510; Pennsylvania, *Purdon's Pennsylvania Statutes*, Sec. 202 and Sec. 1122; South Carolina, *Code of Laws*, 1934, Sec. 8555-2 (13).)

²¹ Statutory provisions governing the disposition of proceeds are found in Alabama, Arizona, California, District of Columbia, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Missouri, New Hampshire, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Virginia, Washington, and Wisconsin.

²² See *New Hampshire Gas & E. Co.*, 88 N.H. 50, 184 Atl. 602 (1936).

panies had been overcapitalized with the resulting tendency to prevent voluntary rate reductions.²³

At present supervision over the security issues of public utilities is exercised by both the Securities and Exchange Commission and the Federal Power Commission. The former exercises its authority under the Securities Act of 1933 and the Public Utilities Act of 1935: the latter acts with respect to electric power companies under the Federal Power Act of 1935.

The Securities Act of 1933. The Securities Act of 1933 confers upon the Securities and Exchange Commission a limited jurisdiction over all securities issued and sold in interstate commerce.²⁴ This act, which applies to all classes of corporations, not simply to utility companies, is primarily concerned with assuring the full disclosure of all material facts that are requisite to enable the investor to judge any particular security.

The Securities Exchange Act of 1934. The Act of 1934 extended Commission regulation to the organized stock exchanges and the over-the-counter markets in order to eliminate manipulation and other abuses associated with trading in securities. The statute provided for more adequate annual reports and other information regarding corporations whose securities are traded on any of the national securities exchanges.²⁵

The Public Utility Act of 1935. Under the Public Utility Act of 1935, the Commission has supervision over all registered holding companies and their subsidiaries with respect to the issuance of securities.²⁶ Only when a declaration has become effective may a registered holding company or subsidiary issue or sell any security or "exercise any privilege or right to alter the priorities, preferences, voting powers, or other rights of the holders of an outstanding security of such company."²⁷ The declaration includes all of the information and documents required under Section 7 of the Securities Act of 1933, together with such additional information as the Commission may prescribe "as necessary or appropriate in the public interest or for the protection of investors or consumers."²⁸ Before it may permit a declaration to become effective, the Commission must not only find that all material facts have been fully and accurately disclosed, but it must also find that the proposed security conforms to certain quite specific and strict statutory standards.²⁹ The purpose of security regulation under the Public Utility Act of 1935 is not to assure that investors may secure full information with respect to security offerings, but to protect both existing and prospective security holders and consumers, and to assist state regulatory authorities.

The jurisdiction of the Federal Power Commission. The jurisdiction of the Federal Power Commission over electric companies engaged in interstate commerce is intended to provide supervision over those companies whose

²³ *Public Utility Act of 1935*, 49 Stat. 803, Sec. 1 (b).

²⁴ 48 Stat. 74.

²⁵ 48 Stat. 881.

²⁶ 49 Stat. 803, Sec. 6 (a).

²⁷ Sec. 6 (a). It is made unqualifiedly unlawful for any registered holding company or subsidiary to sell any security of the holding company from house to house, or to cause any officer or employee of a subsidiary company to sell any of the securities of the holding company. (Sec. 6 [c].)

²⁸ Sec. 7 (a).

²⁹ Sec. 7 (b), (c), (d), and (e).

securities are not subject to regulation either by the Securities Exchange Commission or under the laws of the state in which they are organized and operating. As the holding-company systems are reorganized and as an increasing proportion of public utility companies cease to be either holding companies or subsidiaries within the meaning of the Public Utility Act of 1935, corporations which are now subject to the Securities and Exchange Commission will cease to come under its jurisdiction and will fall increasingly within the scope of the Federal Power Commission's control. At the present time, however, the Federal Power Commission's regulation of security issues is both less extensive and less intensive than that of the Securities and Exchange Commission.

The nature of the regulatory problem. The problem of security regulation presented to the federal commissions is quite distinct from that which faced the state commissions in earlier years. If the utility industries have not come to maturity, at least their rate of growth is slackening. Where the state commissions have been concerned primarily with the assurance of new capital to a rapidly growing industry, federal regulation was instituted at a time when the public utility industries were not experiencing full financial health. Federal regulation was presented with the urgent problem of restoring sound financial conditions, and this objective could be attained only through a reform program. The first requisite was the elimination of the excessive capitalizations that had arisen from the stock-watering activities of years before 1930. A reconstitution of capital structures was urgently needed to reduce the proportion of debt to equity capital, and to place the companies in a position where they would be able to raise new capital on economical terms. The interest-bearing securities of utility companies were unduly burdensome and required refunding at lower rates of interest. The inadequate provisions for depreciation and maintenance in the past had resulted in a deterioration in physical properties; satisfactory service for the future required that more adequate provision be made for depreciation and that any past impairment in the capital of these companies arising from deferred maintenance and the financing of replacements by new security issues be made good. And finally, there was the necessity for a more equitable distribution of voting control in the interest of creating a more responsible management and giving those investors who provide the capital a voice in management proportional to their investments.

5. STANDARDS FOR SECURITY REGULATION

Commission regulation of the capital issues of utilities has important repercussions upon the interests of investors, consumers, the management, and those who underwrite and distribute the securities. How can the divergent interest of these groups be safeguarded?

There are seven standards to which all security issues of utility companies should conform: the corporation should have a reasonable total capitalization, reasonable both in relation to the actual investment in corporate assets and

to the present and prospective earnings; it should have a reasonable capital structure; the capitalization should be confined to desirable types of securities; the purposes for which securities are sold should be compatible with sound principles of accounting and financial management; the amount of the issue should not be in excess of the company's requirements for new capital; the terms of the issue should be consistent with due economy in the raising of capital; and the result of any security issue should leave the corporation with an equitable distribution of voting power. The specific content of these standards may be examined.

A REASONABLE TOTAL CAPITALIZATION. What should be the basis for judging the reasonableness of the total capitalization? Should the capitalization of a utility be adjusted to its earning capacity, to the rate base recognized by the commission, to the actual investment in capital assets, or to the investment made by security holders? All of these have been proposed as security bases.

The adjustment of capitalization to earning capacity. The capitalization of a corporation may appear to be above or below the sum that would be indicated by a capitalization of its earnings at the prevailing rate of return. If a corporation is undercapitalized on an earnings basis, should it be permitted to increase its capitalization? The principal advantages of such a change to a corporation would be threefold: it would avoid the appearance of having excessive profits, and so forestall criticism with respect to its charges; the total value of its outstanding securities might be expected to increase as a result of a stock split or a stock dividend; and also, if the shares have been selling at a high price, the consequent lowering of price might result in a wider distribution of the securities among investors.

There are certain disadvantages for a corporation in a policy of increasing capitalization, even when the increase is not in excess of the total that might be supported by its established earning capacity. The credit of the utility may be impaired if its earnings subsequently decline. Even if earnings are sustained, the capitalization of a company at the limits justified by existing earnings tends to have an unfavorable effect upon its credit; a corporation with a sizable surplus is able to borrow funds at lower interest and to issue equity securities on more favorable terms than one with no cushion of earning power or of assets such as is provided by a substantial surplus. Furthermore, the increase in capitalization will presumably be accompanied by a proportional reduction in the surplus account; with a smaller surplus the corporation has less freedom in continuing the dividend payments in years where current earnings are less than current dividend requirements; to freeze the surplus into the capitalization may therefore result in limiting its future ability to follow a liberal dividend policy such as might have been justified on the basis of the earned surplus prior to the increase in capitalization.

From the point of view of regulatory authorities and consumers, an increase in a utility's capitalization to the limit justified by its present earnings is disadvantageous. The higher the corporation's capitalization in relation to its investment in assets and its earning capacity, the higher the cost of capital may be expected to be. An equally serious objection to maintaining the cap-

italization at the full sum justified by present earnings is the fact that the corporation's freedom of choice with respect to future capital issues may be seriously impaired.

Except at certain crises in the life of the corporation, there is seldom any suggestion that capitalization be adjusted downward to conform to a decline in earnings. However, such adjustments do come about voluntarily when the corporate management wishes to establish a surplus against which to write off an impairment in capital. With this exception, downward adjustments in capitalization are likely to be associated only with receivership and reorganization proceedings. The established legal rights of various classes of security holders do not permit the management to make such adjustments of capitalization to lower earnings at will, and the difficulty of such downward adjustments emphasizes the inadvisability of permitting a corporation to be capitalized at the full sum which might appear to be justified by current earnings.

There are legitimate uses of the earnings-capacity base in regulating the capitalization of utility companies. The capitalized earnings of the company may be accepted as the maximum beyond which the company should not be capitalized. If a proposed issue of securities would result in an outstanding capitalization in excess of the sum indicated by the capitalization of expected earnings at the prevailing rate of return, there is *prima facie* evidence that the proposed issue of securities should not be approved. In approving security issues in connection with a reorganization or merger, the commission may insist that the capitalization of the new company be not in excess of the prospective earnings, capitalized at the recognized fair rate of return.

The rate base. In the search for the proper base for capitalization, the question naturally rises as to why the rate base should not serve as the base for security issues. Since most utilities are protected from competition and since the rate base constitutes the standard by which the company's right to earnings is established, it may appear that the use of this basis for determining the total capitalization would result in a capitalization which would be both stable and consistent with the company's prospective earnings. The earnings sanctioned by regulatory authority would always be a reasonable rate of return upon the outstanding securities; the company would therefore be able to raise capital on favorable terms; and the company would likewise be spared such criticism as might arise if its earnings appeared excessive in relation to a more conservative capitalization. Nonetheless, on further analysis, the advantages of basing capitalization upon the rate base appear to be illusory.

Several objections to using the rate base to judge the reasonableness of total capitalization exist. First, the rate base lacks stability, especially when the present-value base is used. Secondly, if the capitalization should be adjusted to the rate base the commission might find itself seriously hampered if circumstances should subsequently require a reduction in the rate base. Thirdly, since serious consequences would attend a reduction in the rate base below the capitalization, the question may be raised again as to whether it would be feasible to expect the capitalization to be adjusted to reductions in the rate base; the impracticability of downward adjustments emphasizes the inad-

visability of formally joining the capitalization to the rate base. Freedom of action for the commission, as well as adherence to a sound financial policy by the corporation, require a capitalization that is somewhat less than the rate base.

Net investment in capital assets. If net investment in capital assets should be adopted as the base for security issues, the corporation would be permitted to issue securities against any expenditures properly chargeable to capital accounts without regard to the source of the capital funds. This base has been widely accepted by commissions, which have tended to approve security issues whenever the company has capital assets equivalent to, or in excess of, the existing capitalization plus the par value of the proposed issue.

The use of actual net investment by the corporation as the base for capitalization would have certain advantages. First, the capitalization would reflect the actual investment by the corporation, and therefore the earnings on the outstanding securities would reflect the true rate of earnings upon the capital assets used. Secondly, if every capital expenditure could be capitalized, the corporation would be encouraged to make additional investments as required. There would be an inducement to management to follow a liberal policy in the reinvestment of earnings. Thirdly, to base capitalization upon the actual net investment by the corporation would afford a stable security base, in contrast to the fluctuating base that would be inescapable if either capitalized earning capacity or the rate base should be used.

There are certain possible inconveniences attached to the use of actual net investment as the security base. The accumulation and maintenance of a corporate surplus is in itself a sound financial policy for a corporation to follow. The capital assets obtained through the reinvestment of earnings create a cushion of earning power and asset value which affords protection to security holders, enhancing the investment standing of a corporation's securities. From the point of view of regulatory authorities and of investors, it is desirable to keep a record of the capital contributed by security holders distinct from the amount of capital which has been acquired through the reinvestment of earnings. The freezing of the surplus also limits the freedom of the corporate management with respect to future dividend policies.

The investment of security holders. The acceptance of the investment by security holders as the proper measure of corporate capitalization would assume that the par value of the capitalization would be adjusted to the actual contribution which investors have made to the corporate treasury. This basis for capitalization is the most conservative of those considered, and it possesses advantages which make it appear to be the most desirable standard for use by public service commissions. First, the investment of security holders is a stable sum. Secondly, the utility's earnings on the actual investment contributed by investors is a highly significant fact which, in the interests of public policy, should be readily determinate. These earnings are perhaps the most important single factor influencing the attitude of investors. Thirdly, the acceptance of this base for capitalization results in the accumulation of a surplus to the extent that earnings are reinvested, and the presence of an earned surplus gives the corporation greater financial strength and greater freedom in its dividend

policy. Fourthly, publicity as to the actual investment by security holders may be expected to lead to more realistic methods of rate making, the utility's rates being established with reference to its actual financial requirements. Fifthly, there would be less danger that accidental destruction of property or insufficient provision for depreciation would result in an impairment of capital or a deterioration in the investment standing of its securities.

Certain obstacles or objections to the use of the investment by security holders as the basis of the corporate capitalization may be noted. First, the adoption of this base may be impracticable for corporations whose present capitalizations are excessive in relation to the actual investment by security holders. Secondly, since a corporation cannot always be sure of selling its securities at par, there might exist minor discrepancies, discounts, or premiums, between the par value of outstanding securities and the sum which investors have paid into the corporate treasury. Thirdly, confining capitalization to sums actually paid in by investors may expose a utility corporation to criticism, especially where the public fails to realize that the corporation has followed a policy of reinvesting its earnings. Fourthly, it has been said that restricting security issues to the investment by security holders and refusing to permit stock dividends where earnings have been reinvested would tend to discourage a corporation from following this conservative policy.

No fixed basis for capitalization can be maintained under all circumstances. The discrepancies that arise from the sale of securities at a discount or a premium are obvious. A more serious difficulty is encountered whenever the capitalization is excessive, for downward adjustments in capitalization can seldom be realized without elaborate proceedings. It is not, in practice, necessary to adhere to a single standard in estimating the total capitalization that is appropriate for a utility corporation; all of the measures or standards suggested have some significance. In general, the most useful standard is the investment by security holders.

A REASONABLE CAPITAL STRUCTURE. It is not enough that regulations should seek to maintain a reasonable total capitalization for utility enterprises; it is equally important that the capitalization consist of such classes of securities in such proportions as to maintain a reasonable capital structure.³⁰ A capital structure is reasonable when it is balanced and elastic.

Balance. Balance is a concept which is directed to the future ability of the corporation to maintain solvency and raise new capital economically, and is hence fundamentally a function of the corporation's earning power. A balanced capital structure would limit the bonded indebtedness of an operating utility to fifty per cent or less of the total capitalization and the remainder of the investment would be raised through junior securities.³¹ In general, it may be said that the total bond issue should not exceed one-half of the investment in earning assets, that the fixed charges on bonded indebtedness should be earned at least twice, after full provision for depreciation and maintenance, and that the margin after bond interest should be substantially greater than

³⁰ Capital structure refers to the proportion of the capitalization that consists of bonds, other indebtedness, preferred stocks, and common stocks.

³¹ It is assumed that there are no write-ups in asset values, and no stock-watering.

any possible fluctuation in the gross earnings of the corporation. Since it would be desirable never to have bonds exceed one-half the investment in utility assets, it would presumably be advisable to have the bond issue restricted to less than 50 per cent of total capitalization, so that any subsequent issue of bonds might not carry the total bonded indebtedness above the 50 per cent margin. The remaining capitalization should consist predominantly of common stock, although small issues of preferred stock are reasonably safe. From the point of view of balance, an ideal capital structure for a utility corporation would consist of at least 50 per cent common stock, not more than 30 per cent bonds, and not more than 20 per cent preferred stock, the ultimate objective being to keep contractual payments well below the margin of safety.

A balanced capital structure has significant advantages for both investors and consumers. It provides safety against corporate failures; where the total bond issue is small, there is little likelihood that the earnings of any one year will not suffice to pay the fixed charges. The added security that comes from a conservative capitalization carries the assurance that the utility will be able to obtain capital at low cost. And finally, a balanced capitalization facilitates the raising of new capital even when conditions in the investment market are not notably favorable.

Elasticity. A capital structure possesses elasticity when it is adaptable to new conditions. The first requirement is a simple capital structure, since a complicated capital structure consisting of many different classes of securities sets up legal rights which can be changed only with difficulty. In the interest of elasticity it is also desirable that the corporation should make its senior securities, both bonds and preferred stocks, callable so that low-interest bearing securities may be substituted for outstanding securities whenever a substantial saving is thereby possible.³²

DESIRABLE TYPES OF SECURITIES. In the past regulation has paid insufficient attention to the type of security. The use of undesirable types of securities produces a deterioration in the investment standing of utility securities and an increase in the cost of capital, not only to the company issuing the dubious securities but to the industry generally; and the complexity of corporate structures resulting from the multiplication of security types has exposed investors to injustice, discrimination, and substantial pecuniary losses.

Most utility financing has been accomplished through long-term indebtedness, either mortgage bonds or debentures, and common stock. These two classes of securities clearly have distinctive functions to perform in adjusting the capital requirements of the industry to the financial needs of different investors. But many companies have not been satisfied with two classes of securities: many issues of bonds and debentures, the use of short-term notes, the introduction of one or more issues of preferred shares, and the devising of several classes of common stocks have not been uncommon aspects of the financial policy of both holding and operating companies. The misfortunes

³² It should be noted that it is not necessary for the corporation to make its bonds and preferred callable at a high premium. While a modest premium may make the security more attractive to investors, a large premium handicaps the corporation without any corresponding advantage in increasing the marketability of the new issue to which the premium feature is attached.

that have befallen utility investors since 1930, together with the attempt of the federal government to cope with the problems created by the holding company, have belatedly focused attention on the importance of restricting utility security issues to certain standard types whose characteristics are clearly understood by investors.

The Public Utility Act of 1935 has made a start in the formulation of the principles which should govern the selection of the types of security by which utility holding companies will be financed. For the future, the security issues of holding companies are expected to be confined to common stock and bonds (and receivers' or trustees' certificates).³³ A departure from these rigid standards is permitted where the security issue is for the purpose of refunding or extending an outstanding security or for the purpose of effecting a merger, consolidation, or other reorganization. An exception is also permitted where the financing is by a public utility company. The most notable feature of these standards is the omission of preferred stock as appropriate for holding companies.

Bonds. The propriety of bonds in the capital structure of utility companies is generally acknowledged, in view of the stability of their earnings. Operating utilities and holding companies have issued bonds freely, using mortgage bonds, collateral-trust bonds, and debentures.³⁴ When issued in reasonable proportions, the bonds of operating utilities possess those characteristics of safety of principal and assurance of income which are implied in the term "bond." However, a strict adherence to proper standards of security would require that holding companies, whose assets consist primarily of the junior securities of operating subsidiaries, forego completely the use of bonds in their financing.

Since capital requirements are large and fairly continuous, utilities have found it advisable to use open-end mortgage bonds rather than closed mortgage bonds. The open-end mortgage bond permits the issuance of new bonds under the existing indenture subject, commonly, to two restrictions—bonds may be issued only to a certain percentage (66%, 75 or 80 per cent) of the new capital requirements, and additional bonds may be issued only when the earnings available for bond interest are a minimum multiple (usually 2 or 1½ times) the interest requirements, including the interest on the bonds to be issued.

The collateral-trust bond has been gravely abused, especially by holding companies.³⁵ A collateral-trust bond should not be issued on the pledge of

³³ Provision is also made for the guarantee of, or assumption of liability on, the securities of other companies. (Sec. 7 [c] [1].)

³⁴ The mortgage bond is secured by a lien on physical property; the collateral-trust bond is secured by the pledge of other securities; and debentures are secured only by the general credit of the corporation without a lien either on the physical property or other securities.

The attractiveness of bond issues to utility promoters and to the common-stock "control" has rested on two considerations: (1) the borrowing of capital at an interest rate below the rate of earnings on the total investment has increased the earnings available to the common stock; and (2) where the corporate income tax law permits the deduction of bond interest before the calculation of the tax, the existence of the bond issue has decreased the utility's tax liability and increased earnings on the common stock.

³⁵ Federal Trade Commission, *Utility Corporations*, No. 72-A, pp. 373-376.

junior securities or common stocks; yet this class of security was usual for the collateral trust bonds of holding companies prior to 1935. The collateral should possess the same qualifications with respect to security of interest and principal that are possessed by the mortgage bonds. This requirement is now imposed on registered holding companies and their subsidiaries by the Public Utility Act of 1935.

The debenture has been issued by both strong and weak corporations. It constitutes a preferred claim on the assets of the corporation in case of liquidation and a contractual claim on the earnings to the extent of the stipulated interest. Unlike the mortgage bond or the collateral-trust bond, the debenture does not constitute a lien upon specific assets. However, the same general standards with respect to security of principal and income should apply to the debenture as apply with respect to collateral-trust and mortgage bonds; the corporation should possess earnings and assets of a character which would permit it to issue mortgage bonds or collateral-trust bonds before it is justified in issuing debentures.

Certificates of indebtedness. The certificate of indebtedness is a short-term obligation, usually maturing within twelve months, though sometimes running for two years. This security has two legitimate uses: to enable the management to raise funds required for working capital or to facilitate the acquisition of funds for capital investment when market conditions are unfavorable to the flotation of long-term bonds. However, to incur short-term indebtedness for expenditures which are not self-liquidating is to expose the corporation to financial embarrassment if these notes mature when it is difficult to effect their renewal and impossible to accomplish their funding into long-term issues. For this reason the certificate of indebtedness should be used sparingly, and the total issue should be rigidly restricted, perhaps to 5 per cent or less of the total capitalization.

Preferred and common stocks. In the past, preferred stocks have been issued extensively by both operating and holding companies. Such securities imposed no fixed obligation to pay dividends, and by making them non-voting large issues could be sold without any disturbance to the control of the company. It is now generally agreed that preferred stock should possess voting privileges proportional to its investment, and the current trends in rate regulation have raised the question whether preferred shares are now appropriate instruments for the financing of utility companies. The query has been answered in the negative for holding companies, and it is apparent that preferred stock issues will henceforth be used more sparingly by operating companies. In the past the common-stock issues of some companies have exhibited a bewildering variety of voting privileges and rights to earnings, and they have all too frequently been "watered." For the future the more extensive use of equity financing is imperative, and it will presumably be accomplished through the issue of undifferentiated common stock, that is, common stock without limitations or preferences as to voting rights or earnings.³⁶

PURPOSES FOR SECURITY ISSUES. A primary standard in judging whether an

³⁶ The characteristics of the more desirable classes of securities are considered in the next section.

issue of securities should be approved concerns the purposes for which the proceeds of the security issue are required. The modern utility statute specifies three findings which must be made before the commission may authorize an issue of securities: (1) the issue must be for a lawful object within the corporate purposes of the company and compatible with the public interest; (2) the issue must be for a purpose which is necessary for, or consistent with, the proper performance by the company of its service as a public utility and which will not impair its ability to perform that service; and (3) the issue must be "reasonably necessary or appropriate for such purposes."³⁷ The provisions of the Public Utility Act of 1935 with respect to registered holding companies and their subsidiaries reflect the special problem of the holding company. The Commission is instructed to prevent the sale of a security if it finds that "financing by the issue and sale of the particular security is not necessary or appropriate to the economical and efficient operation of a business in which the applicant is lawfully engaged or has an interest."³⁸ And in enumerating the types of securities which may be issued, restricting the holding companies to common stock and bonds, the statute permits exceptions where the issue is for the purpose of refunding outstanding securities or effecting a merger, or for the purpose of financing the business of the issuing corporation as a public utility company.³⁹ In summary, the usual purposes for which securities may be issued comprehend the refunding of outstanding obligations, the raising of funds for new capital expenditures, the reimbursing of the corporate treasury for capital expenditures already made, and the acquiring of the securities or assets of another company where the issuing corporation may lawfully effect a merger, consolidation or acquisition of securities.⁴⁰

The mere fact that a utility wishes to issue securities for a purpose recognized as legitimate does not automatically result in approval by regulatory authorities. The significance of the enumeration is to exclude all issues of securities, with or without commission approval, if they are not for one of the recognized purposes. In any particular instance, the commission must find that the expenditure of funds is consistent with the performance of its public function by the utility and compatible in all respects with the public interest, and it must also find that the particular security issue proposed is reasonably necessary and appropriate to raise funds for the approved purpose. Where funds are otherwise available—as, for example, where funds are available

³⁷ *Federal Power Act*, Sec. 204 (a). A similar statement with respect to the purposes of security issues is to be found in the *Transportation Act of 1920*, C. 91, Sec. 439, 41 Stat. 494 (*Interstate Commerce Act*, Sec. 28 [2]).

³⁸ *Public Utility Act of 1935*, Sec. 7 (d) (3).

³⁹ *Ibid.*, Sec. 7 (c) (2).

⁴⁰ The following are representative cases arising under the Public Utility Act of 1935: (1) Refunding: *North American Co.*, 4 S.E.C. 434 (1939); *Central Illinois Gas & Electric Co.*, 5 S.E.C. 115 (1939); *Pennsylvania Power & Light Co.*, 5 S.E.C. 684 (1939); *Public Service Company of Colorado*, 5 S.E.C. 588 (1939); *Consumers Power Co.*, 6 S.E.C. 444 (1939); *Dayton Light & Power Co.*, 6 S.E.C. 787 (1940); *Southwestern Gas & Electric Co.*, 6 S.E.C. 806 (1940); *El Paso Electric Company*, Holding Company Act Release No. 2535 (1941). (2) Mergers: *Pennsylvania Light & Power Co.*, 5 S.E.C. 684 (1939); *El Paso Electric Co.*, Holding Company Act Release No. 2535 (1941). (3) The acquisition of new property: *Consumers Power Co.*, 6 S.E.C. 444 (1939); *El Paso Electric Co.*, Holding Company Act Release No. 2535 (1941). (4) Reorganization: *North American Co.*, 4 S.E.C. 434 (1939); *Utilities Power & Light Co.*, 5 S.E.C. 483 (1939); *Community Power & Light Co.*, 6 S.E.C. 182 (1939).

through a depreciation reserve—the commission may refuse to authorize an issue of securities for the purpose of financing new construction.⁴¹

AMOUNT OF ISSUE. The limitation of security issues to the sum requisite to raise the proceeds required to enable the utility to perform efficiently its public service is a critical yardstick in the control of security issues. Obviously the amount of securities to be issued should not be in excess of the quantity required to finance proper capital additions or to refund maturing obligations. Where capital investments have been financed in part through reinvested earnings or through the accumulation of a depreciation reserve, the amount of the issue may be restricted to an aggregate less than the capital expenditures. Also, where the present and prospective earnings of the corporation do not justify the existing capitalization, plus the securities to be issued, restrictions may appropriately be imposed. It is not enough to establish the necessity for the capital investment for which the proceeds are to be used, or the prospective improvement in fixed charges, or the adequacy of corporate earnings; beyond all this, the necessity for issuing securities in the *amount* requested must be affirmatively established.

The public interest in the amount of security issued is direct and fundamental. If the utility issues more securities than are required, it not only incurs an obligation to pay the interest and dividends required by contract or by the legitimate expectations of investors, but it may also diminish its future ability to raise capital. The more conservative the capitalization of the utility, the lower the cost of capital will be, the easier new capital may be obtained, and the stronger is its position to face future financial contingencies.⁴²

In determining the amount of securities that may properly be issued, the actual cost or net investment in the utility property should be the base, and clearly neither the estimated reproduction cost of a property nor any appreciation arising from a revaluation of the property should serve as a justification for capitalization in excess of the net investment.⁴³ But in judging the legitimate amount of an issue, the cost of the property to be acquired does not always justify an equivalent issue of securities; rather, the value of the property, on a cost or an earnings basis whichever is lower, defines the total legitimate capitalization, and if the value of the property will be less than the *pro forma* capitalization, the commission is presented with a *prima facie* case for withholding its approval.⁴⁴

⁴¹ *Consolidated Edison Co.*, 22 P.U.R. (N.S.) 239 (N.Y., 1938).

But presumably a commission may not insist that a company shall apply surplus earnings to the purchase of new capital assets, and refuse to authorize an issue of securities for the purpose of providing for capital additions simply because the corporation has such surplus earnings. (*Fall River Gas Works Co. v. Gas and Electric Light Commrs.*, 214 Mass. 529, 102 N.E. 475 [1913].)

⁴² *New Hampshire Gas & E. Co.*, 88 N.H. 50, 184 Atl. 602 (1936); *Torrance Water, Light & P. Co.*, 3 Cal. R.C.R. 361 (1913).

⁴³ *Oahu Ry. & Land Co. Stock Dividend*, 86 I.C.C. 137 (1923); *California Water Service Co.*, 32 Cal. R.C.R. 423 (1928); *American States Water Service Co.*, 35 Cal. R.C.R. 659 (1930); *New Hampshire Gas & E. Co.*, 88 N.H. 50, 184 Atl. 602 (1936); *San Gabriel Valley Water Service*, 19 P.U.R. (N.S.) 168, 169 (Cal., 1937).

⁴⁴ *Metropolitan Edison Co.*, 10 P.U.R. (N.S.) 233 (Pa., 1935); *Northern States Power Co.*, 22 P.U.R. (N.S.) 225 (Wis., 1938); *Northwest Cities Gas Co.*, 13 P.U.R. (N.S.) 167 (Or., 1936); *Stoughton Light & Fuel Co.*, 17 P.U.R. (N.S.) 160 (Wis., 1936).

TERMS OF ISSUE. In the early regulation of securities by state commissions it was assumed that the self-interest of the company and its management would guarantee that the terms of issuance would be the most favorable obtainable. The growth of holding companies and fuller experience with their financial practices have led to more critical consideration of the terms of issuance. The objective is patent—to enable the company to secure the necessary funds with the minimum expenditure for financing costs, and at the same time to assure that the terms and methods of distribution shall not be detrimental to investors. Thus the Securities and Exchange Commission, in its supervision of registered holding companies and their subsidiaries, is authorized to grant its approval to a security issue only if it finds (1) that the fees, commissions, or other remuneration are reasonable, and (2) that the terms and conditions of the issue or sale of the security are not detrimental to the public interest or to the interests of investors or of consumers.⁴⁵

VOTING POWER. The equitable distribution of voting power has only recently been emphasized as a significant standard in judging the propriety of a security issue. With the exception of bondholders, who are given superior security with respect to both principal and income by contractual right, it is now recognized that investors should possess voting power in proportion to their investment. Specifically, the use of non-voting preferred stock and various classes of voting and non-voting common stock, or the use of different classes of stock having voting rights which are not proportionate to their investment value, is considered contrary to public policy.⁴⁶

The discussion of the general standards by which regulatory authorities judge the propriety of a security issue has covered a number of criteria, some of which are pertinent to the work of state commissions regulating operating companies and others which are of importance chiefly to the Securities and Exchange Commission; some standards pertain to particular classes of securities, while others concern the occasions for security issues. The more comprehensive standards provided by the Public Utility Act of 1935 are indicative of the present tendency to impose enlarged responsibilities upon regulatory authorities. It is clear that the fundamental tenets of regulation no longer assume that managerial judgment shall be conclusive with respect to financial matters; indeed, the exercise of managerial discretion is seriously restrained by commission control, and the commission itself operates increasingly under more explicit direction from the legislature.

6. THE FUNCTIONING OF COMMISSION CONTROL

COMMISSION STANDARDS AND THE OCCASION FOR REGULATION. The different occasions for the sale of securities present different problems to regulatory authorities and sometimes result in the adoption of different standards for judging the propriety of the issue. An appreciation of the significance of the circum-

⁴⁵ *Public Utility Act of 1935*, Sec. 7 (d) (4) and (6).

⁴⁶ The Commission is instructed to permit the alteration of priorities, preferences, voting power, or other rights of outstanding securities only if it finds that there will be no unequal or inequitable distribution of voting power arising therefrom. (*Public Utility Act of 1935*, Sec. 7 [c] and [g].)

stances surrounding each proposal for an issue of securities will serve to clarify otherwise inexplicable variations in the practices and standards of regulatory authorities.⁴⁷

At the inception of the corporation three standards seem particularly pertinent: the corporation should secure assets equivalent to the nominal value of the securities which it issues; provision should be made for a distribution of voting power which reflects the relative investments which have been made by different security holders;⁴⁸ and each class of security should be protected against any dilution of its claims or any violation of its priorities through changes in the financial policy of the corporation by action of the management or of the junior security holders.

Where new securities are issued to raise additional capital, regulation's principal task is to assure that the new investors come into the corporation on an equitable basis with those who are already security holders. This implies more than requiring that the corporation shall receive assets equivalent to the par or nominal value of the securities issued; it is necessary, either through giving existing security holders an opportunity to subscribe to the new issue or through sale of the security at its true investment value, that the corporate surplus belonging to existing security holders shall not be spread over the new and larger security issue without the receipt of corresponding benefits by the corporation and by the prior security holders.

The standards which have applied to security issues arising out of mergers and consolidations have been mostly negative. Commissions have been satisfied if the securities of the new corporation are not in excess of those of the constituent companies. Yet clearly regulation should insist, as the price of approving the proposed merger, that the newly created corporation begin life with a sound financial structure, and that the errors and excesses of the past be eliminated. Similarly, receiverships and reorganizations should afford an occasion for the establishment of a sound capital structure for the new corporation.

Perhaps nowhere has the difference in standards for security issues more clearly reflected the occasion for the issue than in refunding operations. Thus, until recently, the Securities and Exchange Commission has permitted refunding issues where the result has been an improvement in the position of the corporation, even though the debt issue was large or even increased by the refunding operations—the justification being that the position of investors

⁴⁷ Typical decisions of the Securities and Exchange Commission arising out of different occasions for the exercise of regulatory supervision are the following: To raise new capital—*Consumers Power Co.* 6 S.E.C. 444 (1939); *Southwestern Gas & Electric Co.*, 6 S.E.C. 806 (1940). To refund existing obligations—*Consumers Power Co.*, 6 S.E.C. 444 (1939); *Pennsylvania Power & Light Co.*, 5 S.E.C. 684 (1939); *Southwestern Gas & Electric Co.*, 6 S.E.C. 806 (1940); *El Paso Electric Co.*, Holding Company Act Release No. 2535 (1941). To effect a merger—*Pennsylvania Power & Light Co.*, 5 S.E.C. 684 (1939). To finance a reorganization, voluntary or involuntary—*West Ohio Gas Co.*, 3 S.E.C. 1014 (1938); *Utilities Power & Light Corp.*, 5 S.E.C. 483 (1939); *North American Co.*, 4 S.E.C. 434 (1939); *Community Power & Light Co.*, 6 S.E.C. 182 (1939); *El Paso Electric Co.*, Holding Company Act Release No. 2535 (1941). To alter the rights and priorities of outstanding securities—*Columbia Gas & Electric Corp.*, 4 S.E.C. 406 (1939).

⁴⁸ Where certain investors, such as the bondholders, secure genuine protection under contractual terms, there is no necessity for insisting that such genuine creditors have a voice in the management of the corporation.

was not worse and that that of the consumer might be improved by the reduction of fixed charges.⁴⁹ In a number of refunding cases the increase in indebtedness was temporary, since provision was made for the relatively rapid retirement of the increased debt.⁵⁰ The adoption of less rigorous standards for refunding issues has been protested from within the Commission,⁵¹ and in a recent decision the Commission averred that, since the statute makes no distinction between refunding and other issues, the same standard would be applied to refunding issues.⁵²

EXEMPTIONS FROM COMMISSION SUPERVISION. Under the typical statute, all security issues are subject to commission control, except for short-term notes or certificates of indebtedness.⁵³

The regulation which the Securities and Exchange Commission exercises over the security issues of holding companies and their subsidiaries is both less comprehensive and more intense than the supervision exercised by the more progressive state commissions. This is reflected in the statutory exemptions with respect to security transactions by registered holding and subsidiary companies. There exist three general classes of exemptions: (1) There is the usual exemption of the short-term note or draft, but the exemption is more restricted than that usually found in state statutes, applying only if the note is not part of a public offering, only if it matures within nine months from the date of issue, and only if the aggregate of such outstanding notes and drafts does not exceed 5 per cent of the principal amount of other outstanding securities.⁵⁴ (2) The security issue of subsidiary companies is exempt if the issue is solely for the purpose of financing the business of the subsidiary and if the issue has been expressly authorized by the state commission having jurisdiction over the subsidiary.⁵⁵ The Commission may attach any terms and conditions which it deems appropriate for the protection of investors or consumers. The conditions commonly attached by the Commission are concerned with preventing a dissipation of assets, and cover such matters as provisions for depreciation and restrictions upon dividend payments.⁵⁶ It is cus-

⁴⁹ *Republic Service Corp.*, 2 S.E.C. 44 (1937); *Public Service Co. of Colo.*, 5 S.E.C. 788, 819 (1939). In the *Public Service Company of Colorado* case there were large write-ups still on the books of the corporation; and the bonds, debentures, and publicly held preferred stock were, according to the dissenting opinion of Commissioner Healy, in excess of the sums actually invested in the company. (Pp. 857-858.)

⁵⁰ *Pennsylvania Power & Light Co.*, 5 S.E.C. 684 (1939).

A substantial number of the refunding cases in which relatively lax standards have apparently been applied have arisen under the express statutory exemptions created by Section 6 (b) of the Public Utility Act of 1935: *Public Service Co. of Indiana*, 6 S.E.C. 286 (1939); *Central Illinois Electric & Gas Co.*, 4 S.E.C. 612 (1939); *Northern Indiana Public Service Co.*, 6 S.E.C. 354 (1939); *Dayton Power & Light Co.*, 6 S.E.C. 787 (1940).

⁵¹ See the dissent of Commissioner Healy, *Public Service Co. of Colo.*, 5 S.E.C. 788, 856 (1939).

⁵² *El Paso Electric Co.*, Holding Company Act Release No. 2535, p. 19 (1941).

⁵³ *Supra*, p. 690.

⁵⁴ *Public Utility Act of 1935*, Sec. 6 (b). Where the outstanding securities have no principal amount or par value, the fair market value as of the date of the issue sets the limitations for short-term indebtedness.

⁵⁵ A very substantial proportion of the exemptions from commission supervision of securities fall within this category. See, for examples, *Central Illinois Electric & Gas Co.*, 5 S.E.C. 115 (1939); *Dayton Power & Light Co.*, 6 S.E.C. 787 (1940).

⁵⁶ A common condition requires that a stipulated percentage of gross earnings (or of book assets) be applied to provisions for maintenance and depreciation. Another common requirement is that a specified amount of the surplus be "frozen," that is, be not available for dividend

tomary to provide that if the authorization of the state commission should be withdrawn the exemption granted would thereupon terminate.⁵⁷ (3) Security issues are exempt from Commission control if they are solely for the purpose of financing the business of a subsidiary company "when such subsidiary company is not a holding company, a public utility company, an investment company, or a fiscal or financing agency" of any such company.

DISCLOSURE OF ESSENTIAL DATA. Full disclosure of all essential data to regulatory authorities and to investors is a fundamental part of security regulation. Disclosure of essential information serves a threefold function: full disclosure is *per se* a significant regulatory technique, for management will voluntarily adhere to higher standards when any departure from such standards is likely to be given due publicity; full disclosure is indispensable to the effective functioning of regulatory agencies; and the collection and dissemination of pertinent data are essential safeguards of the interests of present and potential investors.

The availability of accurate and complete information with respect to any proposed issue of securities is fundamental to the exercise of intelligent regulation. To assure the availability of such data, accounting systems are prescribed, regular and periodic reports are required from utility companies, and declarations involving much information and documentary material must accompany any petition for approval of security issues. Analysis attempts to discover the probable effects of the proposed issue on the ability of the corporation to raise additional capital, the ability of the commission to exercise effective control over rates, and the distribution of voting power. In addition, the Commission must be satisfied that all applicable state laws and regulations have been fully complied with.⁵⁸

The full disclosure of pertinent data with respect to security issues also helps to safeguard the investor. The protection of the investor in itself constitutes a legitimate goal of regulatory effort, and the provisions with respect to full disclosure as found in the Securities Act of 1933 (relative to registration statements and the accompanying documents) have the protection of the investor as their goal.⁵⁹ But for utility corporations the protection of the investor also serves the interest of the consumer, for any reduction in the risks incurred by investors may be expected to effect a saving in capital costs. The attempt to make the protection of investors more effective is illustrated by the information required in all prospectuses which must accompany an offer of securities,⁶⁰ and in the reports of the Securities and Exchange Commission

payments, while there is any suspicion that capital is impaired. (*New Mexico Gas Co.*, 6 S.E.C. 547, 554 [1940]; *Dayton Power & Light Co.*, 6 S.E.C. 787, 794 [1940]; *Southwestern Gas & Electric Co.*, 6 S.E.C. 806, 818 [1940].)

⁵⁷ It is not apparent whether the standards of Section 7 (c) and (d) should be read into the Section 6 (b). (*Southwestern Gas & Electric Co.*, 6 S.E.C. 806, 823 [1940].)

⁵⁸ *Public Utility Act of 1935*, Sec. 7 (g).

⁵⁹ The regulation operates through requiring that all securities be registered with the Commission before being offered in interstate commerce. No positive standards to which securities must conform are set up by the Act; indeed the program of regulation is concerned simply with making full information available to the prospective investor, and with imposing penalties and civil liabilities upon all of those who are guilty of furnishing misleading, inaccurate, or incomplete information.

⁶⁰ *Securities Act of 1933*, Sec. 10.

which must accompany the solicitation of proxies and consents in conjunction with the reorganization of holding-company systems.⁶¹

STANDARDS FOR BOND ISSUES. Seven general questions are presented to the regulatory authority that is called upon to pass judgment upon the creation of debt by a utility: these are concerned with the capital structure of the company, its earning power, the availability of alternative methods of financing, the provisions of the bond indenture and the qualifications of the trustee, the policy to be followed with respect to the continuance of the indebtedness, and the relation of the corporation's financing policy to the general conditions of the industry and the investment market.

(1) The proposed bond issue must be reasonably adapted to the capital structure of the issuing corporation and other companies in the same holding-company system.⁶² A security is reasonably adapted to the capital structure of the corporation and other affiliated companies when the result of the proposed issue leaves the corporation with a balanced capital structure, when the security actually possesses those characteristics with respect to priority of claims on earnings and assets which are normally associated with that category of security, and when there are absent those features of pyramiding and stock-watering which exist when "securities are issued upon the basis of fictitious or unsound asset values having no fair relation to the sums invested in or the earning capacity of the properties."⁶³

The first concern is with the nature of the property which is pledged as security for the bonds. The bond should be secured by a lien on physical property of the company or by obligations which are themselves a lien on the physical property of subsidiary corporations.

In judging whether a bond issue is adapted to the security structure of the corporation, the Securities and Exchange Commission has relied upon several yardsticks: the ratios of debt to gross property, to properly depreciated property account, and to total capitalization. The proper or reasonable ratio of debt to total capitalization or to property accounts will depend in part upon the nature of the junior securities which are outstanding; where the remaining capitalization consists entirely of common stock the proportion of bonded indebtedness may be somewhat higher than would otherwise be desirable. It has been suggested that, ideally, the ratio of debt to total capitalization should not exceed 40 to 45 per cent, the ratio of funded debt to properly depreciated property account should not exceed 50 per cent, and the ratio of debt and preferred to net assets should not exceed 75 per cent.⁶⁴ But even these ratios may under certain circumstances prove to be less than conservative. There have been numerous instances where the Commission has permitted declarations to become effective which resulted in the fixed debt of the corporation being more than 50 per cent of the total capitalization though a majority of the cases involving a high debt ratio have been refunding issues which effected a reduction in fixed charges and provided for a relatively rapid amor-

⁶¹ Public Utility Act of 1935, Sec. 11 (g).

⁶² Public Utility Act of 1935, Sec. 7 (d) (1).

⁶³ Public Utility Act of 1935, Sec. 1 (b) (1).

⁶⁴ El Paso Electric Co., Holding Company Act Release No. 2535 (1941).

tization or retirement of outstanding debt through the use of serial bonds or sinking-fund plans.⁶⁵

A more significant ratio is that of the fixed debt to the properly depreciated property account, a ratio which should not exceed 50 per cent for a conservatively capitalized utility. Here the Securities and Exchange Commission has not always held to a strong policy, particularly with respect to those companies having significant write-ups in their property account. In the *Public Service Company of Colorado* case, it was acknowledged that there were write-ups amounting to \$23,000,000 still on the books and that the aggregate of bonds, debentures, and publicly held preferred stock would be "in excess of the sums actually invested in this company and of the net property account minus inter-company profit."⁶⁶ In addition to the fact that this issue was for refunding purposes, other special circumstances were thought to justify allowing the declaration to become effective; namely, the reduction in interest costs, the possible benefits therefrom to consumers, the exceptional earnings record of the property, and the improvement in certain features of the indenture with respect to maintenance and replacement funds and restrictions upon common-stock dividends. It may be doubted whether, with the relatively higher contemporary standards, such an issue would now receive Commission approval.

(2) A bond issue must be reasonably *adapted to the earning power* of the utility.⁶⁷ Formal compliance with the earnings standard normally exists without the intervention of public authorities, for this standard is the one to which investors are most sensitive, and without compliance with the standard it would be difficult to sell the security. It is generally said that the fixed charges of a company should be earned at least twice, that is, that the balance after fixed charges should be equal to the amount of those fixed charges. Most of the declarations that have come before the Securities and Exchange Commission have had more than this earnings coverage. The record has naturally been better in those cases where the decision to issue securities has been voluntary, as in the raising of new capital or in the refunding of issues which have not yet matured, and the margin has been least adequate in those situations where circumstances compelled the issuance of the securities.⁶⁸

⁶⁵ Thus in the *Public Service Company of Colorado* case, 5 S.E.C. 788 (1939), the ratio of debt to total capitalization exceeded 60 per cent, but the refunding accomplished both a reduction in the ratio of debt to capitalization and a saving in interest charges; and in the *El Paso Electric Company* case, Holding Company Act Release No. 2535 (1941), the ratio of debt to capitalization was 54 per cent, being reduced by the refunding from 62.4 per cent. In a number of instances, as in the *Dayton Power & Light Company* case, 6 S.E.C. 787 (1940), where the ratio of debt to capitalization was 54.6 per cent, the issue was exempt under Section 6 (b) of the Act, as an issue being used to finance the business of the declarant as a public utility and having been expressly authorized by the state commission.

⁶⁶ 5 S.E.C. 788, 802, 858 (1939). In *Central Illinois Electric & Gas Co.*, 5 S.E.C. 115 (1939), an issue exempt under section 6 (b), the ratio of debt to net property account minus write-ups was 101.2 per cent.

⁶⁷ *Public Utility Act of 1935*, Sec. 7 (d) (2).

⁶⁸ As examples of the numerous refunding cases, a bond issue of the Kansas Power Company had a coverage of 2.25 times on a *pro forma* basis, 5 S.E.C. 353, 356 (1939); Pennsylvania Power and Light Company, 4.13 times, 5 S.E.C. 684, 695 (1939); Northwestern Gas and Electric Company, 4.64 times, 6 S.E.C. 806, 818 (1940); Public Service Company of Colorado, 3.25 times, 5 S.E.C. 788, 811 (1939). In an issue involving the raising of new capital, the Commission approved a declaration of the Iowa Public Service Company where bond interest was earned on a *pro forma* basis 1.93 times, 3 S.E.C. 1043, 1048 (1938). Issues incidental to sim-

Whether the compliance is more than nominal, depends upon the accuracy with which earnings are forecast. Before any particular earnings coverage can be accepted as affording a sufficient margin of safety, it must be apparent that both cyclical and other long-run fluctuations in earnings have been fully discounted. For this reason, the margin available after all fixed charges have been met, in relation to the gross earnings of the corporation, is often a more significant test of safety than the number of times interest is earned. The percentage of gross earnings remaining after fixed charges should be greater than any fluctuation in gross earnings that is likely to arise out of cyclical, or other, changes in business conditions.⁶⁹ Though utilities generally enjoy marked stability of earnings, so that it is possible to forecast with reasonable accuracy their prospective income, it must be recognized that the utility's right to income depends upon its investment, and that where earnings are excessive in relation to the investment or rate base, the possibility of rate reductions should be considered. Hence for utility corporations the ratio of debt to the net investment in property must be a significant test of the capital structure, whereas the earnings test alone might be accepted as sufficient for an unregulated business enterprise. In short, the adaptability of the bond issue to the earning capacity of the corporation is a necessary, but not an all-sufficient, test of the propriety of the issue.

(3) The issue of the particular security must be "*necessary or appropriate to the economical and efficient operation*" of the applicant's business.⁷⁰ The meaning of this standard has been most fully explored in the *Consumers Power Company* case, where the Commission refused to approve a \$10,000,000 bond issue because it was "not necessary or appropriate to the economical and efficient operation" of the applicant.⁷¹ Approval was withheld because it was believed that the corporation could readily obtain that sum through the sale of additional common stock on favorable terms and because the ratio of debt to capitalization and to properly depreciated property account was so high as to make unnecessary debt financing undesirable.⁷² On a *pro forma* basis the ratio of debt to total capitalization would have been 52.32 per cent and to properly depreciated property accounts, 59.7 per cent; the ratio of debt

plification have commonly shown good coverage: North American Company, 8.13 times, 4 S.E.C. 434, 452 (1939); El Paso Electric Company, 3.86 times, Holding Company Act Release No. 2535 (1941). Even issues growing out of bankruptcy reorganizations have apparently conformed to the earnings standard: West Ohio Gas Company, 1.93 times, 3 S.E.C. 1014, 1024 (1938); Utilities Power and Light Corporation, 2.83 times, 5 S.E.C. 483, 515 (1939). See also the *Dayton Power & Light Company* case, where interest charges were covered 4.77 times in an issue exempt under Section 6 (b), 6 S.E.C. 787 (1940).

⁶⁹ What this percentage should be for any particular utility company will depend upon the stability of the demand for its service. For a utility serving a diversified market, a margin equal to 15 to 20 per cent of gross earnings may be sufficient; while for a utility that derives an important part of its income from industrial consumers, the balance after fixed charges might have to be 30 to 40 per cent of gross earnings to afford the proper margin of safety.

⁷⁰ Sec. 7 (d) (3).

⁷¹ 6 S.E.C. 444 (1939). The Commission was divided. Commissioners Frank, Eicher, and Henderson joined in disapproving the issue of \$10,000,000 of bonds for the purpose of raising new capital. Commissioners Frank, Healy, and Mathews joined in approving an issue of \$18,594,000 of bonds for refunding purposes and an issue of \$3,531,250 of common stock. Commissioners Healy and Mathews would have approved the issue of \$10,000,000 bonds to raise new capital.

⁷² *Ibid.*, 451-452.

and preferred to total capitalization on a *pro forma* basis would have been approximately 80 per cent, and to properly depreciated property accounts, 89 per cent.⁷³ Indeed, it would appear that the "necessary or appropriate" standard imposes upon registered holding companies and their subsidiaries the obligation to conform to the most conservative financing standards that are feasible, in order that the company may be in the strongest possible position to face future contingencies when new capital may have to be raised under less favorable circumstances.⁷⁴ In summary, then, "a security which satisfies the other test of Section 7 must still be rejected where (1) it is not 'necessary'—i.e., something else is easily available; (2) it is not 'appropriate'—i.e., something unquestionably *better*, something distinctly more appropriate to efficient and economical operation, is easily available."⁷⁵

(4) *The trustee.* Prior to the establishment of federal regulation one of the grave evils with respect to utility finance was the equivocal position occupied by trustees for debt issues. All too often the banking houses which served as trustees had permanent affiliations with holding-company systems, and were more concerned with facilitating a sale of securities than with protecting the bondholders for whom they were trustees. In some instances, the trustees occupied an interest adverse to that of the bondholder, as when the trustee was the owner of junior securities in the corporation. In one of the earlier cases to come before the Securities and Exchange Commission, the trustee was temporarily the largest stockholder in the holding company one of whose subsidiaries was issuing the bonds, the stock having been acquired as a result of a reorganization. Although it permitted the declarations to become effective despite the existing conflict of interest between the bank as trustee and the bank as stockholder, the Commission made it clear that it would henceforth insist upon trustees being wholly disinterested and independent, and that this status must prevail during the negotiations for the sale of the bonds:

"... A trustee who is chosen to represent the interest of those who are asked to purchase a new issue of bonds might well be expected to exercise an alert and active interest in the welfare of those bondholders from the earliest stages of the proceedings. . . . It is unlikely that a trustee will ever find a better opportunity to protect the interest of those security holders than at the time of the formulation of the trust instrument which is to fix the rights and duties of the respective parties."⁷⁶

⁷³ It is significant that the Commission did not find that the proposed issue was not reasonably adapted to the security structure of the declarant; the finding rested squarely on the fact that other better methods of finance were available. The majority even went so far as to hold that the funded debt had not reached the danger point and would not reach that point if the \$10,000,000 of additional debt were created (p. 472); nor did it find that the proposed issue would not be reasonably adapted to the earning power of the declarant, for interest on the funded debt would have been covered 3 times, and the charges on debt plus preferred stocks would have been covered 1.7 times. On these facts, the Commission's conclusions are most dubious; they are clearly inconsistent with the spirit of the Act and constitute dangerous dicta. To the suggestion that the management wished to take advantage of the extraordinarily low cost of bond money, the majority returned the answer that since the company could meet its present need through common-stock financing on favorable terms the question for low rates for borrowed money was irrelevant. (*Ibid.*, p. 471.)

⁷⁴ *Ibid.*, 469-470.

⁷⁵ *Ibid.*, 466.

⁷⁶ *Kansas Electric Power Co.*, 1 S.E.C. 891, 895 (1936).

(5) *Indenture provisions.* The supervision of securities by the Securities and Exchange Commission has produced a very significant improvement in indenture provisions for the protection of bondholders.⁷⁷ The priority of their claims with respect to earnings, and also with respect to assets in case of liquidation, and safeguards against the dissipation of the corporate assets through sinking-fund provisions, the establishment of adequate reserves, and the imposition of restrictions on the use of surplus and dividend payments, have all tended to make utility bonds secured obligations in fact as well as in name.

The indenture provisions designed to secure priority of claims on earnings and assets are concerned with the subsequent pledging of assets, with the issuance of additional bonds, and with subsequent acquisitions of property. An indenture should provide that the company may not pledge or mortgage any of its assets to secure any subsequent indebtedness without equally or ratably securing all outstanding bonds.⁷⁸ It is customary for indentures to provide that additional bonds may be issued for only a stated proportion of net capital expenditures, and then only if the earnings for the preceding twelve-month period give adequate coverage for the payment of interest on outstanding indebtedness plus the indebtedness to be created. This standard also has been improved as a result of the efforts of the Securities and Exchange Commission: the proportion of capital expenditures that can be financed by new bond issues has been more conservative and the earnings coverage has tended to be somewhat more adequate. A specific case may serve to illustrate these features: the indenture for the first-mortgage bonds for the Southwestern Gas and Electric Company provided that additional bonds might be issued only to two-thirds of the net expenditure for the construction or acquisition of bondable property but not to exceed two-thirds the fair value of the company's property (in the past indentures have permitted bond financing up to 80 per cent of new capital expenditures and have omitted all reference to the fair value of the property); and that such additional bonds might be issued only if net earnings for the preceding twelve months were equal to one and three-quarters times the interest requirement on the bonds to be outstanding and other indebtedness secured by an equal or prior lien.⁷⁹

The Trust Indenture Act of 1939⁸⁰ establishes statutory standards with respect to the qualifications for trustees and for indentures under which bonds, notes, debentures, and similar securities are publicly offered for sale in interstate commerce, and prescribes supervision by the Securities and Exchange Commission. It must appear that the trustee is eligible and that the indenture meets the requirements of the Act before any such security can be offered. The indenture must provide a qualified trustee to protect and enforce the rights of investors; he must have adequate rights and duties and responsibilities to act effectively in their interests; he must have adequate resources; and

⁷⁷ The necessity for public concern with indenture provisions was set forth in the Commission's *Report on the Study and Investigation of the Work, Activities, Personnel and Functions of Protective and Reorganization Committees*, Part VI.

⁷⁸ *North American Co.*, 4 S.E.C. 434, 443 (1939).

⁷⁹ *Southwestern Gas & Electric Co.*, 6 S.E.C. 806, 810 (1940). See also *North American Co.*, 4 S.E.C. 434, 444 (1939); *Dayton Power & Light Co.*, 6 S.E.C. 787, 793 (1940).

⁸⁰ 53 Stat. 1149.

he must be free from any conflict of interests with the interest of the investors under the indenture. In general, the trustee must not be an affiliate of the issuing corporation, or hold a trusteeship under another indenture made by the same corporation. The issuing corporation must make periodic reports to the trustee and to the Commission, and both the debtor corporation and the trustee are required to make periodic reports and give evidence of compliance with the indenture provisions.

The Commission has been diligent in requiring indenture provisions to prevent a dissipation of the asset coverage available for senior securities. This has been accomplished through placing restrictions on the payment of dividends, by placing restrictions upon surplus accounts and requiring the accumulation of reserves, by encouraging the use of sinking funds and serial issues,⁸¹ and by providing that properties acquired through the investment of depreciation funds shall not become the basis for subsequent bond issues (except to supply the corporation with funds to finance replacements).⁸² The Commission has recognized the limited nature of the protection which can be afforded by sinking-fund and similar arrangements, and has sought to secure protection of the asset value of bonds by encouraging a larger proportion of equity financing.⁸³

(6) *Should debt be permanent?* Utility companies have been prone to look upon their bonded indebtedness as a permanent feature of their capitalization, and maturing obligations have commonly been met by refunding operations. Experience has underscored the disastrous effects of this policy when followed by the steam railroads and the street railway companies. The Securities and Exchange Commission has recently expressed a determination not to regard debt structures as permanent in the case of corporations which have a high-debt structure, and has indicated its conviction that holding companies and their subsidiaries should take advantage of favorable investment conditions to reduce their indebtedness.⁸⁴

Less reliance upon bond issues has many advantages for the utility industry. By avoiding the financial difficulties that arise when maturities coincide with unfavorable market conditions, the company is safeguarded against default

⁸¹ *North American Co.*, 4 S.E.C. 434, 443, 456 (1939); *Central Illinois Electric & Gas Co.*, 5 S.E.C. 115, 124-125 (1939); *Utilities Power & Light Corp.*, 5 S.E.C. 483, 495 (1939); *Pennsylvania Power & Light Co.*, 5 S.E.C. 684, 691 (1939); *Public Service Co. of Colo.*, 5 S.E.C. 788, 815-816 (1939); *Philadelphia Co.*, 6 S.E.C. 752, 767 (1940); *Duylon Power & Light Co.*, 6 S.E.C. 787, 793-794 (1940); *Indianapolis Power & Light Corp.*, 7 S.E.C. 36 (1940).

⁸² *El Paso Electric Co.*, Holding Company Act Release No. 2535 (1941).

⁸³ "The importance of the sinking fund should not be minimized, of course, and the use of sinking funds has been strongly recommended. But too much reliance should not be placed on that device: for sinking-fund covenants will constitute default producing obligations unless they are made dependent upon earnings in which event they are not always effective; and, to meet future stresses and strains (including those resulting from technological changes), what is needed is a flexibility which additional fixed obligations do not afford. Moreover, the effectiveness of amortizing debt out of earnings is itself dependent upon a strong policy favoring equity financing, for obviously it will accomplish little to retire old debt out of earnings if at the same time new capital is being raised by issuing an excessive amount of new debt. The conclusion is inescapable that an adequate proportion of equity financing is appropriate both for reducing excess debt and for raising new capital, whenever and to the extent that the security markets permit." (*El Paso Electric Co.*, Holding Company Act Release No. 2535, pp. 21-22 [1941].)

⁸⁴ *El Paso Electric Co.*, Holding Company Act Release No. 2535 (1940).

and bankruptcy, and also against a high overall cost for its capital.⁸⁵ The company is in a stronger position to meet technological changes, for experience warns that utility companies may not assume that their existing capital facilities have permanence. Though the immediate interest of common stockholders may be in the increased income which accrues to them though financing with low-interest bonds, in the long run they are exposed to the danger of losing their entire investment if, under a reorganization plan, the doctrine of "full or absolute priority" is applied in adjusting the capital structure of the corporation.⁸⁶ Indeed, the very time when low-cost debt financing appears most attractive is usually the time when common-stock financing on favorable terms is also possible, and the welfare of the consuming public, as well as of all classes of security holders, dictates that the company should follow a conservative financing plan, reducing its bonded indebtedness as circumstances permit.

(7) *Industry standards.* In the regulation of securities and capitalization, it is not enough that a commission should consider the position of the individual company whose security issues are before it. Any policy which adversely affects the investment character of one utility company, particularly if that company be a prominent one, has an adverse affect upon the investment standing of the entire industry. Even policies and practices which are sound for the individual company may, if multiplied, be dangerous for the industry. The Securities and Exchange Commission has recently called attention to a situation which is potentially dangerous to the industry:

"In this connection it is noteworthy that as the result of numerous recent refundings, it is estimated that some \$3,656,200,000 of debt (or well over one-half of the total fixed debt of the utility industry) falls due in the next decade from 1961 to 1970. Moreover, it is estimated that \$2,543,500,000 of funded debt (or almost 40 per cent of the total) falls due in the five years of 1965 to 1969."⁸⁷ It does not require any great foresight to see that such concentration of maturities may cause embarrassment to the entire industry.

PREFERRED-STOCK STANDARDS. *Should preferred stocks be used at all?* The abuses associated with the use of preferred stock by both holding and operating companies are to be measured both by the losses sustained by investors and by the obstacles which dividend arrearages on outstanding preferred stock have created to financing. As of January 1, 1939, the Public Utilities Division of the Securities and Exchange Commission reported on the dividend status of preferred stocks of registered holding companies and their subsidiaries. Eighty holding companies had outstanding preferred stocks having an involuntary liquidating value of \$2,451,898,197; of this aggregate, 57 per cent had dividend arrearages which averaged 25.9 per cent of the involuntary liquidating value of the outstanding preferred stock in arrears. Two hundred thirty-eight subsidiaries had outstanding preferred stock aggregating \$1,754,466,878, of which 31 per cent had dividend arrearages amounting to 26.9 of

⁸⁵ Chapter XV, Sec. 5.

⁸⁶ *Case v. Los Angeles Lumber Products Co.*, 308 U.S. 106 (1939).

⁸⁷ *El Paso Electric Co.*, Holding Company Act Release No. 2535, p. 21 (1941). The data was taken from 21 *Savings Bank Journal* 40 (July, 1940).

the involuntary liquidating value of the stocks in arrears. (See Table 45.) The implication of these figures for investors is obvious: they have been without the income which they expected and they have sustained serious losses if they have sold during the time that the dividends have been in arrears. But the arrearages are equally serious for the industry and consumers: while they continue, all financing must be effected through senior securities, which further injure the investment position of the preferred stock and leave the companies with a top-heavy debt structure; to a considerable extent any earnings otherwise available for dividend payments have to be applied to capital expenditures; and finally, the impaired investment standing of the utility's securities must increase the cost of capital to the company and to the entire industry, to the detriment of ratepayers.⁸⁸

The difficulty of fulfilling the promise of preference as to earnings suggests that preferred-stock financing should be used with caution. Safeguarding the preferred stocks' claim as to earnings requires protection against the creation of new debt or prior preferred stock. It also requires that there be assurance of the due observance of any contract right to cumulative dividends. The first danger, that of the creation of new debt or prior preferred stock, is usually anticipated and can be safeguarded against. The second danger lies in the fact that, where unpaid preferred dividends have accumulated, the common stock is often able to coerce the preferred stock into foregoing forever its right to the accumulated dividends, if there has been any impairment in the capital of the corporation, and if the laws of the state in which the corporation is chartered forbid the payment of any dividends while the capital stock is impaired.⁸⁹ If the impairment in capital is substantial, unpaid preferred dividends may accumulate for years before the impairment is made good and dividend payments can be resumed. In this event, the management, controlled by the common stock, customarily offers a reduction in the par value of the common stock (thereby creating a capital surplus against which to write off the capital impairment) and the promise of an early resumption of dividends, if the preferred stock will waive its right to receive its accumulated and unpaid preferred dividends in cash. Normally, such are the necessities of the preferred stockholders and such the strength of the common's strategic position that the offer, even though grossly unfair to the preferred shares, is accepted.⁹⁰

The difficulty of securing the asset position of preferred stock is another weakness. The preservation of the preferred stock's priority with respect to assets requires protection against the creation of prior preferred stocks or new indebtedness, a danger usually recognized. A more subtle danger arises when there is a payment of dividends out of capital, resulting in a dissipation of the "cushion" of assets which presumably has been provided by the investment of common stock. Such a dissipation of the "asset cushion" may arise through

⁸⁸ See Douglas, *Democracy and Finance*, Chap. 13; S.E.C., *Report on the Study and Investigation of the Work, Activities, Personnel and Functions of Protective and Reorganization Committees*, Part VI (1936).

⁸⁹ This problem is discussed at length in Commissioner Frank's dissenting opinion in the *North American Co.*, 4 S.E.C., 435 (1939), at pages 462-480.

⁹⁰ See *International Paper & Power Co.*, 2 S.E.C. 274 (1937).

TABLE 45*

DIVIDEND ARREARAGES ON OUTSTANDING PREFERRED STOCKS OF REGISTERED HOLDING COMPANIES AND THEIR ELECTRIC AND GAS UTILITY SUBSIDIARIES

	Number of		Involuntary Liquidating Value		Arrearages	
	Co's.†	Issues	Amount	Per cent	Amount	Per cent of Inv. Liq. Value
<i>Total Outstanding Preferred Stocks</i>						
Holding Companies						
In arrears	47	96	\$1,399,807,350	57	\$362,522,198	25.9
Not in arrears	38	57	1,052,090,847	43	—	—
Total	80	153	\$2,451,898,197	100	\$362,522,198	14.8
Operating Companies						
In arrears	82	121	\$ 550,490,514	31	\$147,877,456	26.9
Not in arrears	159	244	1,203,976,364	69	—	—
Total	238	365	\$1,754,466,878	100	\$147,877,456	8.4
All Companies						
In arrears	129	217	\$1,950,297,864	46	\$510,399,654	26.2
Not in arrears	197	301	2,256,067,211	54	—	—
Total	318	518	\$4,206,365,075	100	\$510,399,654	12.1
<i>Preferred Stocks Held by Public</i>						
Holding Companies						
In arrears	43	90	\$1,168,911,229	56	\$282,519,592	24.2
Not in arrears	36	54	913,739,085	44	—	—
Total	75	144	\$2,082,650,314	100	\$282,519,592	13.6
Operating Companies						
In arrears	65	96	\$ 411,737,187	27.3	\$ 89,967,822	21.8
Not in arrears	139	221	1,096,343,189	72.7	—	—
Total	202	317	\$1,508,080,376	100.0	\$ 89,967,822	6.0
All Companies						
In arrears	108	186	\$1,580,648,416	44	\$372,487,414	23.6
Not in arrears	175	275	2,010,082,274	56	—	—
Total	277	461	\$3,590,730,690	100.0	\$372,487,414	10.4
<i>Preferred Stocks Held in System</i>						
Holding Companies						
In arrears	4	6	\$ 230,896,121	63	\$ 80,002,606	34.6
Not in arrears	2	3	138,351,762	37	—	—
Total	5	9	\$ 369,247,883	100.0	\$ 80,002,606	21.7
Operating Companies						
In arrears	17	25	\$ 138,753,327	56	\$ 57,909,634	41.7
Not in arrears	20	23	107,633,175	44	—	—
Total	36	48	\$ 246,386,502	100.0	\$ 57,909,634	23.5
All Companies						
In arrears	21	31	\$ 369,649,448	60	\$137,912,240	37.3
Not in arrears	22	26	245,984,937	40	—	—
Total	41	57	\$ 615,634,385	100.0	\$137,912,240	22.4

† The number of companies under each heading is not additive because some companies have securities in both categories.

* Source: Securities and Exchange Commission, Public Utilities Division, *Dividend Status of Preferred Stocks of Registered Public-Utility Holding Companies and Their Electric and Gas Utility Subsidiaries as of December 31, 1938*, p. 3.

a failure to make adequate provision for depreciation and other reserves, or through the payment of dividends in excess of true net earnings. A dispersion of the "asset cushion" may also result from a writing down of the common stock, in order to create a capital surplus to permit the writing off of an impairment of capital. If, after such a reduction in the nominal common-stock investment, the corporation pays dividends, not only on the preferred stock but also on the common stock, the preferred stockholders are deprived of the margin of safety, or "asset cushion," which existed before the impairment in capital stock occurred.⁹¹ To pay dividends on common stock before the impairment in the common-stock investment has been restored is, in effect, to pay dividends out of capital.

Other considerations also make the use of preferred stock dubious. Where a corporation is protected by a franchise or by the requirement of a certificate of convenience and necessity from the competition of a like service, and where the corporation is subject to regulation which restricts its income to the sum required to cover costs plus a fair return on the property used, it may be seriously questioned whether there exist such substantial differences between preferred stocks and common stocks as to warrant the distinction implied in the creation of two classes of stock. Where a substantial proportion of the utility financing is in the form of bonded indebtedness, the use of preferred stock is even more difficult to defend, for the larger the debt issue, the less the significance attaching to the preferred position with respect to either assets or earnings, and also, the smaller the differential between the cost of capital obtained through the use of preferred and common stocks.

Public policy with respect to the use of preferred stock. The abuses associated with the use of preferred-stock financing by utility companies, both holding and operating, have led to a public policy opposed to the use of preferred stock except under certain limited circumstances. Thus preferred stocks are omitted from the list of securities which may normally be used in financing registered holding companies and their subsidiaries.⁹² The use of preferred stock is permitted only for the purpose of refunding or exchanging outstanding securities, or for the purpose of effecting a merger or reorganization, or "for necessary and urgent corporate purposes," when not to permit the use of preferred shares would "impose an unreasonable financial burden" and when such issue is possible without adversely affecting the public interest or the interest of investors or consumers. Preferred-stock financing is also permitted for financing by operating utility companies.⁹³ Preferred stock is clearly unsuited to the financing of holding companies: the character of the holding company's assets and the conditions under which its earnings

⁹¹ Commissioner Frank has thus summarized the importance of the "cushion" to the preferred stock: "(1) The cushion serves to cover future losses, or shrinkage in the value of the assets, which might otherwise impair the capital contributed by the preferred stock. (2) It furnishes capital, in addition to that contributed by the preferred stock, which will presumably increase the corporate earnings, thus affording a margin of safety for the protection of the earnings available to preferred dividends. (3) It serves as a margin of safety to protect the liquidating value of the preferred stock in the event of a liquidation involving a forced sale with the usual shrinkage in values attendant upon such a sale." (*North American Co.*, 4 S.E.C. 435, 482 [1939].)

⁹² *Public Utility Act of 1935*, Sec. 7 (c) (1).

⁹³ *Ibid.*, Sec. 7 (c) (2).

accrue, especially if there has been any pyramiding, make the preferences of the preferred stock of little significance.

Minimal standards for preferred. (1) Voting rights. The assurance to preferred shares of voting power commensurate with their investment is the basis of any program for their protection and for the preservation of the investment character of these securities. The preferred stock should normally have voting power for the election of directors and all other purposes for which the common stock has voting power, and in addition the preferred shares should have increased voting power whenever their dividends are unpaid for any significant length of time.⁹⁴ Elaborate provisions with respect to voting rights, though uncommon in the past, are now quite generally recognized as essential if preferred stock is to be preferred in fact as well as in name.

(2) Avoidance of coercion by common stock. To avoid the situation in which the assent of common stockholders is necessary to effect a reduction in capitalization to offset an impairment in capital, it has been suggested that a special capital surplus be established which would be reserved solely to meet losses which otherwise would prevent the payment of preferred dividends. This special capital surplus might be created as a paid-in surplus in connection with the sale of common stock, through a reduction in the nominal value of the common stock, or through the reservation of a certain proportion of earnings. So long as this special capital surplus existed, no vote of the common stock would be required to offset losses which might otherwise effect an impairment of capital, and hence the strategic position whereby common stockholders have coerced preferred stockholders into surrendering their claims to accumulated unpaid dividends would be avoided.⁹⁵

(3) Protection of capital cushion. The protection of the cushion created by the common-stock investment is essential to preserve the preferred stock's preference with respect to asset value at liquidation. This may be accomplished by several devices. First, the cushion may be strengthened by the requirement that there be accumulated a special surplus before common dividends be paid. Secondly, where there has been established a special capital surplus, it may be provided that the preferred stock be allowed to elect a majority of the board of directors whenever the special capital surplus falls below a stated amount, and that the control by the preferred-stock board of directors be continued until the special capital surplus be restored. Thirdly, no dividends on the common stock may be payable while the special capital surplus remains impaired, or if a special capital surplus is not used, while the capital of the corporation is impaired. Fourthly, it is necessary that there be restrictions on the purchase or retirement of securities junior to the preferred stock.⁹⁶

(4) The creation of prior claims. The protection of preferred stock against the creation of prior claims upon assets and earnings requires the erection of restrictions against the creation of new funded debt, the use of floating in-

⁹⁴ *Southwestern Gas & Electric Co.*, 6 S.E.C. 806, 810-812 (1940). See also *North American Co.*, 4 S.E.C. 434, 442, 455, 462-516 (1939); *Utilities Power & Light Corp.*, 5 S.E.C. 483, 496 (1939); *Public Service Co. of Colo.*, 5 S.E.C. 788, 823 (1939); *Consumers Power Co.*, 6 S.E.C. 444, 519 (1939); *El Paso Electric Co.*, Holding Company Act Release No. 2535 (1941).

⁹⁵ Commissioner Frank, in *North American Co.*, 4 S.E.C. 435, 489 (1939).

⁹⁶ Commissioner Frank, *North American Co.*, 4 S.E.C. 435, 490-491 (1939).

debtedness beyond a stated percentage of the corporation's capitalization, or the creation of prior preferred stock. There are four procedures by which such protection may be afforded: (1) There may be an unqualified agreement against the creation of any prior indebtedness or prior preferred stock, but such agreements are likely to impose undue hardships on the corporation in circumstances that may require the raising of additional capital which can then be secured only by increasing debt. (2) There should exist a fairly rigid restriction upon the creation of unsecured debt, for such debt can be created without attracting attention and may very seriously undermine the investment position of the preferred shares. (3) The creation of prior claims upon assets and earnings may be permitted only with the assent of the preferred shareholders, voting as a special class.⁹⁷ (4) The issue of prior securities may be permitted only when such prior securities are less than a stated percentage of the total capitalization, when the "cushion" provided by common-stock investment is a specified minimum, and when the corporate earnings are sufficient to meet all prior charges and preferred dividends with a stipulated margin.⁹⁸

COMMON-STOCK STANDARDS. *Abuses associated with common stocks.* Among the weaknesses of utility financing, particularly during the period of holding-company domination, have been the insufficient and improper uses that were made of common stock. An insufficient proportion of utility financing was done through the use of common stock. Such common stock as was used all too frequently represented no real investment; it was "watered stock." In many holding-company systems there was a multiplication of various classes of common stocks, having different par values, issue prices, and voting powers. Finally, the extensive use of no-par stock facilitated practices which often resulted in an impairment in the capital of the corporation.

Par versus no-par stock. The alleged advantages of no-par stock led to its extensive use in the 1920's. It was said that no-par stock avoided misrepresenting the value of the stock to the prospective investor, that it encouraged the prospective purchaser to investigate the true worth of the stock, and that it represented the common stock to be precisely what it was, that is, a right to a proportionate share in the residual earnings and residual assets of the corporation. The chief attraction of no-par stock to the corporation was that such stock could be issued at any price designated by the board of directors, whereas in some states par-value stock could not be issued legally at less than par.

The use of no-par stock developed many abuses. Simply because there is no fixed par value, managements have been prone to issue no-par stock to different purchasers at different prices, thus discriminating against stockholders who have paid a higher price or held the stock while earnings were reinvested. Many corporations developed the practice of charging only a small fraction of the proceeds from the sale of no-par stock to the capital-stock ac-

⁹⁷ Stevens, "Voting Rights of Capital Stock and Shareholders," 11 *Journal of Business* 331 (1938).

⁹⁸ *Columbia Gas & Electric Corp.*, 4 S.E.C. 406, 415 (1939); *Public Service Co. of Colo.*, 5 S.E.C. 788, 821-822 (1939); *Southwestern Gas & Electric Co.*, 6 S.E.C. 806, 811 (1940).

This arrangement is less frequently used than the others and it may not afford comparable protection.

count, crediting the remainder to a surplus account, which was not always designated as capital or paid-in surplus. In subsequent periods of financial stringency, managements sometimes paid dividends out of surplus, without distinguishing between that surplus which had arisen from earnings and that which had arisen through the sale of stock. This practice has resulted in a dissipation of the cushion of assets presumably supplied by the common-stock investment, to the detriment of the investment position of senior security holders and to the possible prejudice of other creditors. Also, no-par stock has proved particularly susceptible of abuse in the exchange of securities to effect combinations and mergers. Finally, no-par stock has made it relatively simple for managements to make excessive issues of stock, and where this practice has been followed not even the reduction in the book value of the stock suffices to avoid many of the evils of overcapitalization. The dividend expectations of investors are not adjusted downward with the increase in the number of shares outstanding, and managements are always under pressure to pay the expected rate of dividends, with the result that properties have not infrequently been starved to meet common-stock dividends.⁹⁹

An awareness of the evils associated with the use of no-par stock and preferred stock led Congress, in the Public Utility Act of 1935, to express a strong preference for the use of only "common stock having a par value and being without preference as to dividends or distribution over, and having at least equal voting rights with, any outstanding security of the declarant."¹⁰⁰ But as with preferred stock, the Securities and Exchange Commission may permit the use of no-par stock for exchange with an outstanding security of the company or for effecting a merger or reorganization, for financing the business of a public utility company, or "for necessary and urgent corporate purposes," where a refusal to permit the use of such stock would impose an unreasonable financial burden or would be detrimental to the public interest.¹⁰¹ In the administration of this section the Commission has observed that a case for the issuance of no-par stock cannot easily be established in view of the presumption of the statute against it, but in a number of instances registered holding companies and their subsidiaries have secured approval for no-par issues.¹⁰² The conditions which may overcome the heavy presumption are suggested by an early decision where the corporation had outstanding \$10 stock that was selling between \$5.75 and \$6.00 a share and the statute did not permit the sale of stock at less than par. With respect to the three alternatives open, the Commission concluded that the creation of a second class of stock would undesirably complicate the capital structure, that the reclassification of the stock with a reduction in its par value might lead to a dissipation of assets that should be retained as a surplus, and that, therefore, the use of no-par stock was in the public interest.¹⁰³

⁹⁹ Berle and Means, *The Modern Corporation and Private Property*, pp. 143-144, 158-159, 167, 171, 254 (1932); Bonbright, *Railroad Capitalization*, pp. 49-57 (1920); Dewing, *Financial Policy of Corporations* pp. 21-29 (3d ed., 1934); Field, *Corporation Finance*, pp. 70-71 (1938).

¹⁰⁰ *Public Utility Act of 1935*, Sec. 7 (c) (1).

¹⁰¹ *Ibid.*, Sec. 7 (c) (2).

¹⁰² *National Gas & Electric Corp.*, 2 S.E.C. 632, 639 (1937); *Consumers Power Co.*, 6 S.E.C. 444 (1939); *Southwestern Gas & Electric Co.*, 6 S.E.C. 806 (1940); *Indianapolis Power & Light Corp.*, 7 S.E.C. 36 (1940); *West Penn Power Co.*, 7 S.E.C. 69 (1940).

¹⁰³ *National Gas & Electric Corp.*, 2 S.E.C. 632, 637-639 (1937).

Voting power. As a general principle, those who invest in a corporation should have voting power commensurate with their investment; voting power should be shared by all who are not protected by contractual agreement, as are the bondholders, against the nonpayment of a return on their investment or against the dissipation of the assets which secure their investment. Problems of voting power have been associated with the issuance of non-voting preferred stock, and with the multiplication of different classes of common stock, concentrating voting rights in low-valued stock retained by the management. The common stock requires little protection against the abuse of voting power lodged elsewhere; in general, any change in the rights of common stock requires the sanction of the common stockholders. If the common stock requires protection, it is against the use of the proxy machinery by management to vote policies inimical to their interest.¹⁰⁴

The issue price of common stock. Regulation has thus far failed to develop any clear-cut standards with respect to the appropriate issue price for common stock. Many state statutes still prohibit the sale of common stock at less than its par value, though many devices exist by which this prohibition may be circumvented and though the prohibition itself may be contrary to the public interest in certain circumstances. Most regulation has concentrated on the protection of the consumer and has, therefore, focused attention on the minimum price at which the security should be sold. More recently, as in the Public Utility Act of 1935, the fairness of the issue price to present and prospective investors has been recognized as a proper concern of regulation; but thus far the number of common-stock issues arising under the 1935 Act have not been sufficiently great to provide the Securities and Exchange Commission with the opportunity of formulating any complete policy as to the relation that should prevail between the issue price of common stock and its earnings coverage or the value of the assets to which it is the residual claimant.¹⁰⁵

In regulating the issue price of common stock there are two principles which should guide commissions: the interest of the consumers dictates that capital shall be raised at the lowest possible cost, cost being judged not simply with reference to the particular issue but with regard to the long-run requirements of the utility; and there must be a full protection of the equities of both the existing and the future stockholders. The interest of existing stockholders may be protected by issuing additional stock at a price which reflects the equity of existing stockholders in the enterprise, or by affording stockholders rights to subscribe pro rata for the additional stock.

The standard for establishing the issue price of common stock may be either the market value of the stock, its book value, or its par value. It will be noted that the use of the market-value standard means, in effect, establish-

¹⁰⁴ See Rule U-61 and Rule U-62, Holding Company Act Release No. 2694.

¹⁰⁵ The following are suggestive of the issue prices in relation to earnings for a number of recent issues coming before the Commission: at \$27 a share, or 17.3 times the earnings applicable to the common stock, in *West Penn Power Co.*, 7 S.E.C. 69, 79 (1940); at \$24, or 11.7 times earnings in *Indianapolis Power & Light Corp.*, 7 S.E.C. 36 (1940); at \$29.50 or 9.4 times earnings, in *Newport Electric Corp.*, 4 S.E.C. 999 (1939); at \$29.50, or 11.0 times earnings, in *Washington Gas Light Co.*, 5 S.E.C. 576 (1939).

ing the issue price with respect to the present and prospective earnings on the stock. The acceptance of either market value or book value as the standard for determining the issue price would certainly suffice to protect the equities of the existing stockholders, whether or not they subscribed to the new security, for the new stockholders would have to pay into the corporate treasury a sum equivalent to the present value of the equity of existing stockholders.¹⁰⁶ And it might seem that the use of the market-value or the book-value standard would guarantee that the corporation would raise capital as economically as possible, for the higher the price of the new stock the smaller the number of shares that have to be issued to realize any requisite capital sum. It was this last consideration, the possibility of restricting the outstanding capitalization of the utility to the smallest possible sum, that prompted Massachusetts to adopt her "premium laws," which required that new shares of capital stock be offered proportionately to existing shareholders at not less than their market value as determined by the regulatory commission. These laws, adopted in the 1890's, persisted until 1908, when the statutes were amended to provide that new shares should be issued at a price not so low as to be inconsistent with the public interest; but the regulatory authorities interpreted the revised law to mean that the issue price should be not lower than was considered requisite to assure the ready sale of the new securities.

In actual operation, the Massachusetts requirement that securities be issued at a premium developed many disadvantages: the regulatory authorities were presented with a difficult technical problem in determining the proper issue price; if the price of the stock should fall below the issue price approved by the Commission, the sale of the new issue might become impossible, or if the decline occurred after the new securities had been sold, the credit of the utility might be adversely affected; where the issue price might be established at an unreasonably high level, the management might hesitate to finance with common stock, lest a future decline in the market value of that stock create dissatisfaction and ill-will among its investors; and finally, the requirement that stock be issued at a premium seriously interfered with the regulation of rates. This last objection, the interference with rate regulation, deserves further analysis: the larger the corporation's earnings or the larger the surplus accumulated through the reinvestment of past earnings, the higher the market price of the stock would tend to be, and consequently, the higher the issue price must be; but issuing stock at a premium creates, in effect, a new par by which the reasonableness of the future earnings of the utility must be judged, with respect to both the old and the new stock issues. Thereafter any reduction in rates which would prevent the payment of the established dividend rate and which would thereby cause the market value of the securities to fall below the prescribed issue price would expose the regulatory authorities to criticism and a charge of bad faith, and might readily result in an impairment in the utility's credit. Thus the requirement that securities be issued at book value or at market value, when that value is above the par value of the outstanding securities, "capitalizes" the existing earnings and the existing

¹⁰⁶ Of course, the existing stockholders might be concerned with the dilution of their voting power if they were not given an opportunity to subscribe to the new issues.

surplus of the corporation, creating a new standard tending to prevent future rate reductions. A similar danger to effective rate regulation is encountered whenever a utility is required to sell its stock at a high price relative to its reasonable earning capacity.¹⁰⁷ In brief, financing policies must not freeze high rates.¹⁰⁸

The objections to the issuance of stock at a premium prescribed by regulatory authority do not apply to a managerial decision to sell stock at a premium, for then the commission is under no implied obligation to permit earnings to protect the issue price, and the premium may be regarded simply as a device to preserve the existing investors' equity in the corporation's assets. And it may be noted that these objections do not apply with substantial force to the sale of holding-company securities at a premium, for this premium is not related directly to the price charged for utility service by the subsidiaries and hence presumably serves only to protect the equities of existing security holders. However, it should be noted that the objections apply with full force to the use of no-par stock which is required to be sold at book or market value; for here also, the successful utility translates every increase in income and every reinvestment of earnings into a new and higher standard by which to judge the reasonableness of the fair return on the common-stock investment.

Should utilities be permitted to issue stock at less than par? Many states have statutory provisions requiring that stock be sold at not less than par. Though evasion of these statutory requirements has been readily possible in the past, especially by holding-company systems, such absolute and rigid requirements may interfere with sound financing. There is, of course, no objection to a requirement that stock be sold at par, if the sale at a lesser price is permitted with the approval of the commission. But an absolute prohibition against selling at less than par may force a utility to resort to debt financing even though equity financing might be both feasible and more desirable; or a corporation may be compelled to reduce the nominal value of its capital stock to conform to the prevailing market price, a procedure which might subsequently lead to the dissipation of the cushion of assets upon which senior security holders and creditors have relied. Although as a general rule new stock should not be sold at less than par, there are circumstances under which the sale at less than par might be entirely consonant with the public interest. Where an issue price below par is approved, it would be appropriate for the commission to impose restrictions upon the future payment of common dividends, until any deficit in the common-stock account should be made good through the reinvestment of earnings.

TOWARD A SIMPLIFIED CAPITAL STRUCTURE. Among the most serious evils to develop in the period prior to federal regulation was the undue complexity which characterized the capital structures of many holding companies and their subsidiaries.¹⁰⁹ A complicated capital structure has many disadvantages

¹⁰⁷ In *West Penn Power Co.*, 7 S.E.C. 69 (1940), the Commission permitted an issuance of stock at \$27 a share, although the asset value of the stock was only \$11.90 (only \$3.75 after deduction for write-ups). Eighty per cent of the amount contributed by new investors went to "fatten" the equity of existing stockholders (chiefly the holding company).

¹⁰⁸ The Massachusetts premium laws are discussed in detail in Barnes, *Public Utility Control in Massachusetts*, pp. 34-58, 81-82, 198-199.

¹⁰⁹ Chapter IV.

for investors and regulatory authorities. It is impossible for the security holder to judge accurately the investment worth of his security; full disclosure of material facts with respect to proposed issues of securities becomes well-nigh impossible; and rigidities develop in the capital structure which make it increasingly difficult for the corporation to raise new capital, especially under unfavorable market conditions. Regulatory authorities find that capital costs are likely to be increased, that new capital may be virtually unobtainable when conditions in the investment market are not extremely favorable, that it is impossible to insist upon the observance of sound financial policies in the creation of new issues, and that it is impossible to discharge their responsibility to assure fair and equitable plans for mergers, consolidations, and reorganizations. Thus both the investor and the consumer have a stake in simplifying the capital structures of utility corporations.

The desirability of simplified capital structures has been recognized in federal legislation, which has sought to limit securities to common stocks and bonds, except under exceptional circumstances.¹¹⁰ While it has permitted companies to issue more than a single class of bonds, to resort to the use of preferred stock, and to use no-par stock, the Commission has continued to move in the direction of a simplified capital structure, preferring, where possible, to consolidate outstanding bonds into a single issue and to eliminate any multiplication of different classes of preferred and common stocks.¹¹¹

TOWARD AN INVESTMENT CAPITALIZATION. The practice of writing-up asset accounts and issuing securities on that basis were among the serious evils of holding-company systems prior to 1935.¹¹² Hence one of the avowed purposes of the Public Utility Act of 1935 was to eliminate the evils associated with the issuance of securities on the "basis of fictitious or unsound asset values having no fair relation to the sums invested" in the property.¹¹³ Not simply the preservation for the future of an equivalence between new security issues and new capital investments, but the far more difficult task of securing a reconstitution of capital structures to reflect the investment in earning properties, is a fundamental objective in the regulation of registered holding companies and their subsidiaries. The reasons for preferring an investment standard for measuring the reasonableness of utility capital structures has already been developed.¹¹⁴

The Securities and Exchange Commission has sought the attainment of investment capitalizations principally through requirements directed toward the amortization of outstanding securities, either through the use of serial bonds or the establishment of sinking funds, and the imposition of restrictions upon dividend payments until an adequate surplus should be built up. And similar results have been obtained through the forgiveness by the holding company of debts owed by the subsidiary and through capital contributions by the holding company.¹¹⁵ The Commission has not taken a strong

¹¹⁰ *Public Utility Act of 1935*, Sec. 7 (c) (1).

¹¹¹ *Utilities Power & Light Corp.*, 5 S.E.C. 483, 487-492 (1939); *Public Service Co. of Colo.*, 5 S.E.C. 788, 810 (1939).

¹¹² Chapter IV.

¹¹³ Sec. 1 (b) (1).

¹¹⁴ *Supra*, p. 697.

¹¹⁵ *North American Co.*, 4 S.E.C. 434, 438 (1939); *El Paso Electric Co.*, Holding Company Act Release No. 2535, pp. 4 and p. 10 (1941).

position in requiring, as a prerequisite to approval of further security issues, a downward revision in capital structures to eliminate write-ups in asset accounts.¹¹⁶

Earnings and capitalization. One serious obstacle to the attainment of an investment capitalization is the tendency to disregard investment figures where corporate earnings support security issues that could not be justified on an investment basis. From the point of view of investors, the capitalization of the company should be limited to the sum which can be supported by the prospective earning power; but from the point of view of consumers and rate-payers, the capitalization of the company should not exceed the net investment in the property used in rendering service, or the sum justified by the prospective income of the company when it is charging no more than reasonable rates, whichever is less. While these principles apply chiefly to operating utilities, a failure to observe similar principles with respect to holding companies may result in increasing the cost of capital to holding and operating companies and in intensifying the pressure on operating companies to maintain dividend payments to their holding company.

The earnings test may be used in two ways: (1) to require a reduction in the capitalization of a holding company or subsidiary where the capitalization, presumably on an investment basis, exceeds the sum justified by prospective earnings, or to support a commission refusal to permit an issue which would result in a capitalization that would be excessive when judged by the earnings standard; or (2) to support a larger security structure than could be justified by the net investment of the issuing corporation. It would appear that the Securities and Exchange Commission has employed the earnings test for both purposes. For example, the *Central Illinois Electric & Gas Company* case involved the issuance of first mortgage bonds and unsecured serial debentures by a subsidiary of a registered holding company, an exemption being granted on the ground that the issues were solely for the purpose of financing the business of the company as a public utility and had been expressly authorized by a state commission.¹¹⁷ The company had a net inflation in its property accounts of more than \$7,000,000, and it was stated that the ratio of debt to net property account less write-ups was 100.2 per cent. This situation was condemned by two members of the Commission,¹¹⁸ and the chairman of the Commission discussed the earnings standard as setting a lower total for capitalization than would be justified if the rate base were assumed to measure the permissible capitalization.¹¹⁹ In the *Utilities Power & Light Corporation*

¹¹⁶ *Public Service Co. of Colo.*, 5 S.E.C. 788, 820 (1939); *Dayton Power & Light Co.*, 6 S.E.C. 787, 793 (1940).

¹¹⁷ 5 S.E.C. 115 (1939).

¹¹⁸ Commissioners Healy and Eicher.

¹¹⁹ Commissioner Frank stated in a concurring opinion:

"1. In the concurring opinion of Commissioner Healy, stress is laid on the fact that in *Atlanta B. & C. R. Co. v. United States*, 296 U.S. 33, the Supreme Court quoted with approval the statement that 'the only pertinent value is that for purposes of sale or exchange.' Whether or not that case is precisely pertinent, I fully agree that, in considering the issuance of new securities, 'sale or exchange value' is the proper criterion for this Commission. The courts have said that sale or exchange value is to be determined by the reasonably expected future earnings of the property; the courts have so held in condemnation cases, in cases involving purchases by municipalities under contract, and in reorganization cases. [See cases cited in *the matter of Genesee Valley Company, Inc.*, 3 S.E.C. 104 at 112 (1938) (footnote 19).] Accordingly when we are consider-

case, a reorganization proceeding, the Commission also discussed the earnings standard, in this instance as a justification for a reduction in the capitalization.¹²⁰ In a third case, the *Public Service Company of Colorado*, a majority of the Commission accepted the demonstrated earning power of the corporation as a justification for a capitalization which could not be supported by the actual investment. There were write-ups of some \$23,000,000 which, if eliminated, would have left the adjusted net property account less than the aggregate of debt and preferred stock authorized by the Commission's order.¹²¹ Commissioner Healy dissented vigorously from the opinion of the majority and insisted that the standards of the Act required adherence to an actual-investment standard in determining the propriety of security issues.¹²²

These decisions and others, involving the use of earning capacity as a standard which may justify a capitalization not supported by actual investment, are pregnant with danger to the consumer. The Commission has no jurisdiction over the rates charged by operating subsidiaries of registered holding companies and so is not in a position to act effectively to protect consumers from excessive capitalizations. Where capitalizations in excess of actual investment obtain even a semblance of official approval, there is a real danger that state authorities will be embarrassed in establishing a rate base less than the capitalization having implied official approval. Increased emphasis on the protection of consumer interests, especially a clarification of the significance of the earning standard, by the Commission is much to be desired.

TOWARD A BALANCED CAPITAL STRUCTURE. *The problem and its importance.* Balance in a capitalization refers to the proportions in which bonds, preferred stocks, and common stocks have contributed to the capital of the corporation. Pragmatically, a capital structure is balanced when all of the securities of the corporation find a ready investment market, so that the company is able to raise new capital through the issuance of either bonds or preferred or common stocks as contemporary circumstances make desirable. Thus a balanced capital structure is one that will support an expansion in the capital investment of the utility; it is a capital structure which will stand up under the impact of depression; and it is one which will assure the availability of adequate capital to meet all legitimate requirements of the corporation. While the importance of a balanced capital structure has been quite generally recognized by state regulatory authorities having jurisdiction over the security issues,

ing the issuance of new securities the controlling factor is the reasonable expectation of the future earnings of the issuing company.

"2. It follows, then, that the rate base is not the controlling factor in determining the propriety of the issuance of new securities. The rate base merely sets the upper limit to the potential future earnings and is pertinent merely to that extent: It can happen, and has happened, that a company is unable to earn a reasonable return on the amount which the courts fix as the rate base. . . .

"In other words, when considering the issuance of new securities, the proper rate base can, at most, have an effect only as a limiting factor; that is, it fixes an upper limit to the sum which the company will be permitted to earn." (*Ibid.*, 134.)

¹²⁰ 5 S.E.C. 483, 500 (1939). See also *Genesee Valley Gas Co.*, 3 S.E.C. 104, 112 (1938); *West Ohio Gas Co.*, 3 S.E.C. 1014 (1938).

¹²¹ *Public Service Co. of Colo.*, 5 S.E.C. 788, 795, 849 (1939). Certain extenuating circumstances have already been noted.

¹²² *Ibid.*, 852-853, 854.

much of the industry has been beyond the scope of state control and has developed capital structures which were deficient in balance.

The achievement of a balanced capital structure. The attainment of balanced capital structures may be possible through a proper administration of corporate income and through observing conservative standards with respect to new capital issues, or it may require a complete reorganization and recapitalization of the company, for even a favorable investment market may not enable a corporation having a heavy bonded indebtedness (with perhaps some capital impairment through inadequate provisions for depreciation, or an accumulation of unpaid preferred-stock dividends) to raise new capital through the sale of junior securities. The Commission has sought to assure a substantial amount of common-stock equity in registered holding companies and their subsidiaries through encouraging the issuance of common stock where its sale on favorable terms has been possible,¹²³ through requiring a reduction of the bonded debt by refunding bonds with junior securities,¹²⁴ through provisions for sinking funds in the indenture for new bond issues,¹²⁵ and through provision for the serial retirement of debentures and notes.¹²⁶ A balanced capital structure may also be attained, where the existing indebtedness is disproportionate, through requiring the corporation to reinvest a portion of its current earnings until the common-stock equity shall reach a safe level. Forgiveness of debt and capital contributions by the holding company have also served to correct unbalanced capital structures.¹²⁷ Of course, capital structures which appear superficially to lack balance may contain hidden capital investments arising from excessive provisions for depreciation or from charging capital expenditures to operating expenses, thus creating a margin or cushion of assets not represented by outstanding securities.

Preservation of a balanced capital structure. A balanced capital structure may be protected and maintained by the same policies through which it is created. Restrictions on the issuance of bonds and provisions for a reduction in bonded indebtedness through sinking-fund and serial bonds have already

¹²³ *Utilities Power & Light Corp.*, 5 S.E.C. 483, 516 (1939); *Newport Electric Corp.*, 4 S.E.C. 999, 1020 (1939); *Washington Gas Light Co.*, 5 S.E.C. 576, 585 (1939); *Consumers Power Co.*, 6 S.E.C. 444, 451-452 (1939); *Indianapolis Power & Light Corp.*, 7 S.E.C. 36, 54 (1940); *West Penn Power Co.*, 7 S.E.C. 69, 81-83 (1940).

¹²⁴ In the *El Paso Electric Company* case, Holding Company Act Release No. 2535, the Commission remarked (p. 24):

"To refuse to permit the issuance of obligations to refund outstanding issues, where the security structure would not be sound, is not at all to penalize the common stock. It is rather to prevent new public investors in senior securities of utilities being brought in until such time as the controlling common stock interests, i.e., the holding companies, are willing and able to refinance in such a way as to bring about a sound capital structure." See also *Consumers Power Co.*, 6 S.E.C. 444, 464-475 (1939).

¹²⁵ *Public Service Co. of Colo.*, 5 S.E.C. 788, 816 (1939); *Dayton Power & Light Co.*, 6 S.E.C. 787 (1940); *Southwestern Gas & Electric Co.*, 6 S.E.C. 806, 810 (1940); *El Paso Electric Co.*, Holding Company Act Release No. 2535 (1941).

¹²⁶ *Northern Indiana Power Co.*, 6 S.E.C. 910, 914 (1940); *South Carolina Electric & Gas Co.*, 7 S.E.C. 345, 346 (1940); *Northeastern Water & Electric Corp.*, Holding Company Act Release No. 2314 (1940).

¹²⁷ *Texas Utilities Co.*, 1 S.E.C. 944 (1936); *Alabama Water Service Co.*, Holding Company Act Release No. 2323 (1940); *National Gas & Electric Corp.*, Holding Company Act Release No. 2385 (1940); *Appalachian Electric Power Co.*, Holding Company Act Release No. 2430, p. 12 (1940); *El Paso Electric Co.*, Holding Company Act Release No. 2535 (1941).

been described. Regulatory authorities may encourage or require utilities to make more extensive use of equity securities in raising new capital or in re-funding. Specifically, the availability of bond money at low interest rates should not be allowed to deflect the company from seeking to achieve a more conservative capital structure whenever conditions permit the issuance of common stocks.¹²⁸ Further attempts at the protection of a balanced capital structure are the imposing of conditions to reconstitute or to freeze a certain proportion of the surplus of the corporation,¹²⁹ the establishment of more ample depreciation provisions,¹³⁰ and restriction upon the payment of dividends.¹³¹ But the policy will be less than successful if an adequate portion of new capital does not come in the form of common-stock equity, either through the sale of new common stock or through the reinvestment of earnings.

The cushion theory. In the cases which have come before the Securities and Exchange Commission, the discussion of the necessity for a balanced capital structure has been largely in terms of the so-called "cushion theory."¹³² Any reduction or impairment in the cushion should come to the attention of both senior security holders and regulatory authorities. It is not enough that the initial capitalization of the corporation should provide an adequate common-stock investment;¹³³ it is also essential that the cushion shall be preserved, and if possible reinforced, through the accumulation of a surplus.

A dissipation of the cushion may result from several circumstances. If dividends are paid in excess of the amount of the current earnings, that part of the cushion which has been represented by reinvested surplus and which may have been a substantial consideration in inducing some security holders to invest is dissipated. Such a policy should not be possible without adequate notice to all security holders that the company is paying dividends in part out of past earnings. A second and more serious infringement on the cushion follows the payment of dividends after the capital of the corporation has been

¹²⁸ *Consumers Power Co.*, 6 S.E.C. 444, 471 (1939). See also *Southwestern Gas & Electric Co.*, 6 S.E.C. 806, 822 (1940).

¹²⁹ *Philadelphia Co.*, 6 S.E.C. 752, 767 (1940); *Columbia Gas & Electric Corp.*, 4 S.E.C. 406, 409-410 (1939); *North American Co.*, 4 S.E.C. 434, 495 (1939); *Kentucky Utilities Co.*, 6 S.E.C. 937, 949 (1940); *West Penn Power Co.*, 7 S.E.C. 69, 84 (1940).

¹³⁰ *Central Illinois Electric & Gas Co.*, 5 S.E.C. 115, 123-124 (1939); *Pennsylvania Power & Light Co.*, 5 S.E.C. 684, 691 (1939); *Public Service Co. of Colo.*, 5 S.E.C. 788, 816, 824, 849-850 (1939); *Southwestern Gas & Electric Co.*, 6 S.E.C. 806, 817-818 (1940); *El Paso Electric Co.*, Holding Company Act Release No. 2535 (1941), pp. 14-15.

¹³¹ *Columbia Gas & Electric Corp.*, 4 S.E.C. 406, 419-423 (1939); *West Penn Power Co.*, 5 S.E.C. 376, 388 (1939); *Public Service Co. of Colo.*, 5 S.E.C. 788, 824 (1939); *Arkansas Western Gas Co.*, Holding Company Act Release No. 2434 (1940).

¹³² The assets represented by the investment of junior securities are said to constitute a "cushion" with respect to income and assets for senior securities. Thus for the bonds, the equity represented by the preferred stock, the common stock, and the corporate surplus together constitutes the cushion; whereas for preferred stock, the investment represented by the common-stock equity, including surplus, functions as a cushion. Discussions of the cushion theory are to be found in *North American Co.*, 4 S.E.C. 434, particularly on pages 480-487 (Chairman Frank's dissenting opinion) (1939); *Columbia Gas & Electric Corp.*, 4 S.E.C. 406, 418 (1939); *Philadelphia Co.*, 6 S.E.C. 752, 765-766 (1940); *El Paso Electric Co.*, Holding Company Act Release No. 2535 (1941).

¹³³ It may be said that the common-stock investment is less than adequate when senior securities are issued in such amounts that bondholders and preferred stockholders are subject to the risks that are ordinarily imposed only upon common stock.

impaired: such a payment to common stock is impossible to justify; such a payment to preferred stock, while not prejudicial to the interests of that class of stockholders, injures bondholders. A more subtle and commonplace encroachment on the capital cushion occurs whenever a corporation fails to make adequate provision for accruing depreciation. A fourth, and an often overlooked, impairment of the capital cushion occurs whenever a corporation writes down its capital stock in order to wipe out a deficit; if dividends are subsequently paid before a common-stock equity equivalent to the amount of the write-down has been reinvested in the business, either by a new capital contribution or by the retention of earnings, there results a permanent reduction in the cushion for all senior security holders.¹³⁴

A concern for the preservation of the capital cushion has taken the form of restrictions upon the payment of dividends, the freezing of surpluses, the requirement of more adequate provision for depreciation, and the inclusion (in covenants governing the issuance of preferred stock) of provisions to prevent payment of common dividends until any prior impairment of capital has been made good, even though such capital impairment has been offset by a formal reduction in the common-stock capitalization.

ECONOMY IN THE RAISING OF CAPITAL. All the regulation of security issues heretofore described would be incomplete unless the utility were required to use the most economical possible methods in selling its securities to the investing public. The assurance of due economy in the raising of capital begins with restrictions on the amount of securities, extends to considering whether the particular security is well adapted to the conditions of the investment market, and finally, examines into the reasonableness of the fees and charges paid to underwriters and distributors. The Securities and Exchange Commission is under a statutory injunction to withhold permission for the issue and sale of a security if it finds that the fees, commissions, or other remuneration are not reasonable or that the terms and conditions of sale are detrimental to the public interest or the interest of investors or consumers.¹³⁵ And the Commission is generally instructed to assure the maintenance of competitive conditions, for the Act is directed against the evils which "result from an absence of arm's-length bargaining or from restraint of free and independent competition," and against a lack of economy in the raising of capital.¹³⁶

Reasonableness of fees and charges. A knotty problem with respect to economy in the raising of capital has been the fees and other compensations paid to underwriters and distributors. The opinion has widely prevailed that there has been an absence of free and independent bargaining between utility companies and underwriters, not simply as a result of formal relations falling within the definition of an affiliate, but also as a result of the practice of plac-

¹³⁴ Chairman Frank dwells at length on the danger to preferred stocks and bonds whenever dividends are paid on common stock while an impairment of the common-stock investment still exists, even though there has been a reduction in common stock to offset the amount of the capital impairment, in *North American Company*, 4 S.E.C. 434, 482-490 (1939). The injury to senior security holders arises not from the reduction in the common stock but from the subsequent payment of dividends before there has been a restoration of the capital cushion. See also S.E.C., *Report on the Study of the Work of Protective and Reorganization Committees*, Part 7, pp. 487-488 (1938).

¹³⁵ *Public Utility Act of 1935*, Sec. 7 (d) (4).

¹³⁶ *Ibid.*, Sec. 1 (b) (2) and (5).

ing securities by private negotiation. In an attempt to meet this situation, the Commission adopted a rule to control the payment of fees to underwriters and finders who were believed to be able, as a result of stock ownership or other relationship, to gain an unfair advantage in bargaining with the utility.¹³⁷ Under this rule no fee could be paid, except on the basis of competitive bidding, to underwriters and finders coming within the rule unless the justification was clear, or unless such a person had a participation of not more than 5 per cent of the total underwriting and was receiving the same fee as that paid to nonaffiliated underwriters.¹³⁸

The cases involving underwriters' fees where there was an absence of bargaining fell into two categories—those where the underwriter chose to avoid a proceeding to determine the question of affiliation by limiting itself to a 5 per cent participation, and those where proceedings were instituted for a commission determination of the applicability of the rule to particular underwriters. There were few, if any, instances of an attempt to comply with the spirit of the rule by showing that competitive bidding was impracticable. In a substantial number of instances, underwriters falling within the rule or appearing to come within its scope limited their participation to 5 per cent of the total issue and agreed to forego any management fee, thus avoiding the necessity of any inquiry into their relationship to the issuer.¹³⁹ The 5 per cent exemption clause of the rule was intended to relieve issuing companies and underwriters of the necessity of an examination into their historical relationship, but the tendency was for underwriters to use this clause as a loophole to continue their underwriting without having to submit to an inquiry with respect to their possible affiliation with issuing corporations. Furthermore, the rule did not achieve its objective, namely, that of encouraging competitive bidding or untrammelled bargaining between issuing corporations and underwriters.¹⁴⁰

A number of proceedings have required a determination of whether in fact an affiliation exists between the underwriter and the issuing utility. In most of these cases, the Commission has permitted the declaration with respect to the security issue to become effective, with the understanding that the underwriter would receive no underwriting or other fees in connection with the issue pending a final determination of the question of affiliation.¹⁴¹

¹³⁷ Rule U-12F-2 applied to persons who fall within the definition of an affiliate [Section 2 (A) (11)]; that is, officers, directors, stockholders, and any person found by the Commission to stand in such a relation to the issuing corporation "that there is liable to be such an absence of arm's-length bargaining in transactions between them as to make it necessary or appropriate in the public interest and for the protection of investors or consumers that such persons be subject to the obligations, duties, and liabilities imposed upon affiliates of a company."

¹³⁸ This rule relating to underwriting fees applied, of course, to negotiated sales. In the period from March 22, 1935, to December 31, 1939, there were 173 issues of bonds by electric and gas corporations, of which 159 were negotiated sales.

¹³⁹ *Northern States Power Co.*, 4 S.E.C. 728 (1939); *Gulf States Utilities Co.*, 5 S.E.C. 170 (1939); *West Penn Power Co.*, 7 S.E.C. 69, 81 (1940); *Iowa Public Service Co.*, 5 S.E.C. 619 (1939).

¹⁴⁰ *Consumers Power Co.*, 6 S.E.C. 444, 457 (1939).

¹⁴¹ *Northern Natural Gas Co.*, 5 S.E.C. 561 (1939); *Halsey, Stuart & Co.*, 5 S.E.C. 865 (1939); *Consumers Power Co.*, 6 S.E.C. 444, 453 (1939); *Dayton Power & Light Co.*, 6 S.E.C. 787, 796 (1940). In the first case the underwriter, Dillon, Read & Co., waived its right to receive a fee,

In some investigations which it has completed, the Commission has found instances of affiliation that have required it to consider the reasonableness of fees. However, where an underwriter and a utility company had canceled a preferential option agreement binding the utility to give the investment banking house first call on its financing, it was concluded that no affiliation within the meaning of the rule still existed.¹⁴² But continuous use of the same agent in placing the company's private offerings of securities, so that the agent was characterized as "an essential arm" of the utility business," created a situation where it was thought necessary to inquire into the reasonableness of a fee amounting to $\frac{1}{2}$ per cent on the principal of an issue of \$15,000,000 or \$75,000. A consideration of the time spent in placing the bonds privately, together with the time spent in preliminary conferences with the utility as to the financing program, led the Commission to conclude that the reasonable and adequate compensation for the services of the agent should not exceed \$40,000.¹⁴³

The reasonable cost for the disposal of security issues depends upon many factors: the size of the proposed issue, the size and reputation of the issuing company, the condition of the investment market, the price at which the security is offered to the investor, the type of security used, et cetera. The importance of the conditions of the investment market requires no elaboration; indeed, if conditions of the investment market are unfavorable, it may be impossible for the utility to float new securities at any cost which is not prohibitive. The size and reputation of the issuing corporation will not only largely determine the reception which investors will accord the new issue, but may also be significant with respect to the number of banking houses that will be interested in handling the securities. A large corporation, having a national reputation, finds a ready-made market for its securities; whereas the equally good securities of a small and relatively unknown corporation may be salable only after an intensive effort to acquaint investors with the merits of the company and its issues. That "spread is a function of price"¹⁴⁴ is a commonplace: the risks sustained by the underwriters are greater in proportion as the particular security is more highly priced.¹⁴⁵ The cost of obtaining money depends upon the type of security used, bonds being more salable than preferred stock, and preferred stock being more readily salable than common stock; and upon the size of the issue, the cost decreasing with an increase in the amount to be distributed. An investigation by the Commission revealed that the cost of flotation for bonds varies from 3.4 per cent for issues aggregating \$5,000,000 to \$10,000,000, to 2.5 per cent for issues of \$25,000,000 or more. The average cost of flotation for preferred stock was 5.7 per cent, and for common stock, nearly 18 per cent.

reserving the right to reassert its claim in the event that the rule should be held invalid or repealed retroactively.

¹⁴² *Halsey, Stuart & Co.*, 5 S.E.C. 865 (1939).

¹⁴³ *Connecticut Light & Power Co.*, 5 S.E.C. 706, 711 (1939).

¹⁴⁴ *Consumers Power Co.*, 6 S.E.C. 444, 500 (1939).

¹⁴⁵ The higher the issue price, the greater the risk that the underwriters may not be able to dispose of the entire issue at that price, and therefore the greater the price that must be paid to the underwriter.

A recent report of the Commission presented an analysis of the cost of flotation for registered securities for the years 1938 and 1939, based upon the estimates contained in the registration statements. For all industries and all classes of securities, there is a tendency for the proportional cost to decline as the size of the issue increases. Thus the cost of flotation for underwritten bond issues amounted to 7.5 per cent for issues of less than \$1,000,000, 3.4 per cent for issues of from \$1,000,000 to \$5,000,000, 2.8 per cent for issues of from \$5,000,000 to \$20,000,000, and 2.4 per cent for larger issues.¹⁴⁶ For stock issues the costs were consistently lower where the issue was from \$1,000,000 to \$5,000,000 than for issues of less than \$1,000,000.¹⁴⁷ It should be noted that this analysis applies to all registered securities, with the exception of investment companies, and not simply to the issues of utility corporations.

The size of the company also has a significant influence upon the cost of financing, the cost becoming progressively smaller as the size of the issuing corporation increases. Thus the cost for underwritten bonds averaged 7.3 per cent for issues by companies having assets of less than \$1,000,000; 3.1 per cent for companies having assets between \$5,000,000 and \$10,000,000; 2.3 per cent for companies having assets of \$200,000,000 and over.¹⁴⁸

The cost of financing depends principally upon the type of security used, it being easier to sell bonds than preferred stocks, and preferred stocks than common. The Commission reported that the cost of flotation amounted to 2.6 per cent for underwritten bonds; 6.3 per cent for underwritten preferred stock; 16.0 per cent for non-underwritten preferred stocks; 16.9 per cent for underwritten common stocks, and 19.0 per cent for non-underwritten common stocks. The largest element of expense was the compensation paid to distributors; this compensation absorbed 77 per cent of the total cost of flotation for underwritten bonds, 81 per cent for underwritten preferred stocks, 93 per cent for non-underwritten preferred stocks, 89 per cent for underwritten common stocks, and 91 per cent for non-underwritten common stock.¹⁴⁹ The other expenses of issuance embrace many items of cost of divergent character and importance. Some of these expenses are wholly independent of the provisions of the Securities Act; such expenses would be listing fees, federal taxes, state taxes and fees, and the compensation paid to trustees, transfer agents, et cetera. Other expense items may be considered partly attributable to registration requirements—printing and engraving, legal fees, accounting fees, engineering fees, and other similar expenses. Finally, there are the registration fees which are wholly attributable to the requirements of Federal regulation. The aggregate of these expense items averaged 0.6 per cent for underwritten

¹⁴⁶ S.E.C., Trading and Exchange Division, *Costs of Flotation of Registered Securities, 1938-1939* (1941).

¹⁴⁷ Most of the preferred and common-stock issues of this period were for less than \$1,000,000, and these smaller issues showed little relationship between cost and size of issue.

¹⁴⁸ For preferred and common stock, financing costs were appreciably lower for companies having assets of from \$1,000,000 to \$5,000,000 than for companies having assets of less than \$1,000,000.

¹⁴⁹ The average compensation paid to distributors was 2.0 per cent for underwritten bonds, 5.1 per cent for underwritten preferred stock, 14.9 per cent for non-underwritten preferred stock, 15.1 per cent for underwritten common stock, and 17.3 per cent for non-underwritten common stock.

bonds, 1.2 per cent for underwritten preferred stocks, 1.1 per cent for non-underwritten preferred stocks, 1.8 per cent for underwritten common stocks, and 1.7 per cent for non-underwritten common stocks.¹⁵⁰

The method of sale has had some influence on the cost of financing: the non-underwritten issues have generally involved a somewhat higher cost of flotation, and where the new securities have been offered to existing security holders the costs of flotation have been relatively low, largely due to the smaller compensation paid to distributors.¹⁵¹

The variations in cost of financing for different industries are not absolutely clear-cut, although there are differences reflecting the investors' preferences for different industries. The Commission reported that cost variations between industry groups were slight for bond issues—2.5 per cent for underwritten bonds of manufacturing corporations and 2.6 per cent for utilities. More marked variations in cost prevailed with respect to preferred stocks—9.0 per cent for manufacturing companies and 4.1 per cent for utility companies.¹⁵²

Competitive bidding. The determination that the fees and other costs incidental to the flotation of securities are only such as are reasonable and necessary has posed a difficult problem for the Securities and Exchange Commission. For practical purposes, a reasonable and necessary fee may be defined as a competitive fee—that is, the issuing corporation should pay no more for the services of underwriting and distribution than the lowest sum at which responsible investment bankers and dealers will undertake to market its securities. If competition is really present and if the securities are sold to the lowest bidder, the Commission may safely assume that the costs are reasonable.¹⁵³

There is no assurance that a competitive price will prevail for the services rendered by underwriters and security dealers in the absence of governmental action to assure the maintenance of competitive conditions. Indeed, it is generally acknowledged that the connection between investment bankers and large corporate issuers of securities has historically been much closer than has customarily prevailed between buyers and sellers in the conventional competitive markets. This absence of competition in the placement of corporate securities has been particularly marked in the public utility and railroad fields.¹⁵⁴

¹⁵⁰ An analysis of the individual expense items indicated that the expenses *not* attributable to registration amounted to 0.227 per cent for bond issues (and the expenses partly attributable to registration to 0.331 per cent), 0.31 per cent for preferred stock issues (and 0.922 per cent for expenses partly attributable to registration), and 0.452 for common stock issues (with 1.026 per cent for expenses partly attributable to registration). It was estimated that the maximum cost of registration was less than $\frac{1}{4}$ of 1 per cent for bonds, $\frac{1}{2}$ of 1 per cent for preferred stock, and somewhat more than $\frac{1}{2}$ of 1 per cent for common stock.

¹⁵¹ In the latter case, the compensation paid to distributors would depend upon the proportion of the entire offer that was taken up by security holders, and the compensation would be specified as a range of fees, the minimum payable if the entire offering should be taken by security holders, and the maximum, if none of the offering should be taken by security holders. This range of compensation was 1.1 to 3.1 per cent for underwritten bonds, 1.9 to 2.9 per cent for underwritten preferred stocks, and 2.4 to 3.3 per cent for underwritten common stocks.

¹⁵² See also S.E.C., Trading and Exchange Division, *Cost of Flotation for Small Issues, 1925-1929 and 1935-1938* (1940).

¹⁵³ See Busby, "Competitive Bidding," 50 *Yale Law Jour.* 1071 (1941).

¹⁵⁴ See Brandeis, *Other People's Money* (1914); Douglas, *Democracy and Finance* (1940), Chap. 3; Report of the Senate Committee on Interstate Commerce Pursuant to Senate Resolution 71 (74 C.), 76 C., 3 s., Rep. No. 25, Pt. 7 (1940).

The "maintenance of competitive conditions" has proved most difficult in those situations where there is, or has been, a continuing relationship or an affiliation between the investment banker and the issuing corporation. To meet this situation, the Commission adopted, effective March 1, 1939, a rule which provided that "no underwriter's fee or finder's fee shall be paid to any affiliate of an issuer or to any person whom the Commission finds stands in such relation to the issuer that there is liable to be or to have been an absence of arm's-length bargaining."¹⁵⁵ The Commission's experience with the rule did not prove satisfactory.¹⁵⁶ The rule proved particularly troublesome in proceedings by the Commission to determine the relationship of an underwriter to an issuer, when a participation larger than 5 per cent was taken and when there had been no effort to obtain competitive bids. In all such cases the proceedings were long and costly, and the results, if unfavorable to the investment banking house, were likely to be contested.¹⁵⁷ Thus, under the rule, the practice of negotiated, rather than competitive, sales persisted and the banker-issuer relationships which were common prior to 1935 continued substantially unchanged.

The Commission's objections to the convention of the negotiated sales rested upon several years' experience with this type of financing. (1) It had proved almost impossible for the Commission to judge the reasonableness of the fees paid to underwriters and dealers; even when extensive proceedings were undertaken the search for the reasonable fee was an attempt to discover the competitive cost of the service although there was no evidence with respect to competition before the Commission. (2) The regulation of fees and other payments when an affiliated relationship was thought to exist imposed a burdensome administrative task upon the Commission and confronted the companies with a costly procedure. (3) The Commission was customarily under pressure to permit the financing to go through in substantially the form and on the terms proposed by the issuing corporation, for modifications with respect to the compensation to underwriters and dealers might involve critical changes in the whole program of financing. (4) There existed an inherent reluctance on the part of investment bankers to compete. It was asserted that investment bankers had "proprietary rights" to certain accounts which were so firmly recognized that the banker could often decide who would take his place if he determined not to participate in a particular financing. (5) The investment banking business had continued to be characterized by considerable

¹⁵⁵ Rule U-12F-2. See also S.E.C., Public Utilities Division, *The Problem of Maintaining Arm's-Length Bargaining and Competitive Conditions in the Sale and Distribution of Securities of Registered Public Utility Holding Companies and Their Subsidiaries*, pp. 3-4 (Dec. 18, 1940).

¹⁵⁶ *Supra*, p. 730.

¹⁵⁷ *The Problem of Maintaining Arm's-Length Bargaining and Competitive Conditions*, at page 8; quoted from Brief of Counsel for the Public Utilities Division, *In the Matter of the Dayton Power & Light Co. and Morgan Stanley & Co. Inc.*, File 65-3.

The Commission's decision in the *Dayton Power & Light Co. and Morgan Stanley & Co.* case, announced more than a year after the institution of proceedings, illustrates the tremendous scope of the inquiry necessary in a proceeding of this nature. Extensive investigation into the corporate history of the investment banker, the issuer, and its corporate parent, the circumstances of issuance of each security floated by the holding-company system in the past ten years, the shifts in boards of directors of a number of companies—all this and more was necessary to establish the absence of arm's-length bargaining in one transaction. (Holding Company Act Release No. 2654 [1941].)

concentration with respect to the management of the high-grade issues, a few leading New York City investment firms having the bulk of the business.¹⁵⁸ (6) The increasing tendency of utility corporations to resort to private offerings—that is, selling the securities directly to insurance companies and other institutional investors—was a source of concern. Such private offerings were usually completely outside the scope of competitive conditions. Moreover, the unequal position of the institutional investor was thought to threaten the availability of investment bankers and the markets the latter served, as sources of funds to registered holding companies and their subsidiaries, to the ultimate detriment not only of the investment bankers and security dealers but also of utility companies, their investors and consumers.¹⁵⁹

After study by the Public Utility Division of the Commission and conferences and public hearings, the Commission concluded that no satisfactory substitute existed for competitive bidding as a means of assuring reasonable fees and compensation to underwriters and distributors of utility securities. It therefore adopted, effective May 7, 1941, a new rule requiring competitive bidding in the issuance and sale of securities by registered gas and electric public utility holding companies and their subsidiaries.¹⁶⁰ The rule provided that the Commission would not grant or permit any application or declaration to become effective unless the company, at least ten days prior to concluding any contract or agreement, or the issuance or sale of securities, should have publicly invited sealed written proposals for the purchase or underwriting of the securities. The rule further required that the issuing or selling corporation should file with the Commission a statement of its compliance with respect to the public invitation of bids, a copy of each proposal received, and a statement of the action which it proposes to take with reference to the sale of the securities. The rule applied to the issuance of new securities by registered public utility holding companies and their operating subsidiaries and to the sale of outstanding securities by these companies.¹⁶¹ The rule neither required the acceptance of the highest bid nor precluded the possibility of rejecting all bids. It applied to the sale of junior securities as well as to the sale of senior securities,¹⁶² and it is significant that no exemption was granted with respect to the private placement of securities. Several categories of transactions were excluded from the operation of the rule: securities issued pro rata to existing security holders in accordance with a pre-emptive right or privilege or in any liquidation or reorganization; loans having a maturity of ten years or less,

¹⁵⁸ It appeared that some six New York firms enjoyed a virtual monopoly over the origination of desirable quality bond issues, and that most of the investment bankers lived from "whatever crumbs may fall from the table of the few dominant investment banking houses." (*The Problem of Maintaining Arm's-Length Bargaining*, pp. 10, 23.)

¹⁵⁹ The strategic position of the institutional investors arises primarily from the fact that they do not purchase securities for resale; hence, they are often able to agree upon a specific price at a much earlier stage in the course of the negotiations than are investment bankers; and also the institutional investors need not gauge their offers so as to permit the realization of a profit upon an immediate resale of the security.

¹⁶⁰ Rule U-50, Holding Company Act Release No. 2676.

¹⁶¹ *Public Utility Act of 1935*, Sec. 6, 7, 12 (d).

¹⁶² The difficulties in determining the reasonableness of the spread and the adequacy of the price for junior securities are, in the absence of the evidence supplied by competitive bidding, even more serious than those arising with respect to bonds.

where the lender was a financial institution, the debt was not for resale to the public, and no finder's fee or other charge was paid; transactions whereby securities were acquired by a registered holding company or a subsidiary pursuant to an order of the Commission;¹⁶³ and transactions in which the issuer or vendor would realize less than \$1,000,000.¹⁶⁴

The rule prescribing competitive bidding was adopted over the strenuous objections of investment bankers.¹⁶⁵ (1) It was urged that competitive bidding would lead to overpricing of security issues to the immediate injury of the investor, and to the ultimate injury of consumers if overpricing should result in a swing away from utility securities by investors. Similarly it was argued that competitive bidding would force distributors paying high prices for securities to adopt high-pressure selling methods, seeking primarily the avoidance of loss to themselves rather than service to investors. In reply to this objection, the Commission noted that any tendency to overbid would be self-correcting, since the financial losses incurred by investment bankers from overbidding would promptly curb the practice. Furthermore, the Commission would still have a responsibility to investors to consider the appropriateness of the proposed price, and in the discharge of this function it would have the benefit of the informed consensus of investment bankers as to what the price should be.¹⁶⁶

(2) The Commission admitted, first, that the traditional relationship between the investment banker and the issuer would probably not survive the competitive-bidding requirement, but it questioned whether any serious disadvantage would follow. The rule would still permit investment bankers to act in a professional capacity in advising companies with respect to the conditions of the investment market and the selection of an appropriate type of security, and such professional service could be compensated on a fee basis.¹⁶⁷ Secondly, the claim that the investment banker in continuous underwriting relationship to the corporation would be available to supply funds under adverse market conditions was asserted not to have been sustained by the facts, for since investment bankers do not invest their own funds they are in turn dependent upon their ability to sell the security to investors. Thirdly, the contention that continuity of underwriting relations would assure a thorough investigation of proposed issues by qualified financial experts intimately acquainted with the affairs of the issuing corporation, and hence would guarantee the soundness of the security to the investing public, was likewise found

¹⁶³ *Public Utility Act of 1935*, Sec. 10. This exemption was intended to facilitate the regrouping of utility properties.

¹⁶⁴ It was thought that such small issues might not create sufficient interest to attract informed bids.

¹⁶⁵ Opposition to the competitive bidding rule came almost exclusively from investment bankers. No individuals actively associated with the management of any holding-company system made a personal appearance.

¹⁶⁶ Objections to competitive bidding are found in *Examination of the Proposal of the S.E.C. Staff for Compulsory Competitive Bidding*, Investment Bankers Association, January 18, 1941; *Report on Competitive Bidding*, Special Committee of the National Association of Security Dealers, January 15, 1941; *Reply of Morgan Stanley & Co., Incorporated*, January 27, 1941; Stanley, *Competitive Bidding for New Issues of Corporate Securities* (1939).

¹⁶⁷ Experience had demonstrated that the advice given by investment bankers who expected to underwrite a proposed issue of securities was sometimes conditioned more by the prospect of the bankers' profit than by the issuer's needs and interests.

to be of little practical significance; indeed, investment bankers often underwrite and distribute securities issued contrary to their advice. Also, such intimate familiarity with the affairs of the issuing corporation had become less significant, for the Commission had accumulated a vast volume of pertinent information with respect to utility holding companies and their subsidiaries, and the registration statements under the Securities Act of 1933 and the applications under the Public Utility Act of 1935 made available most of the pertinent data. Finally, regarding the contention that the self-interest of the investment banker impelled him to require that securities contain terms and conditions designed to protect the investor, the Commission noted that the general inadequacy of these safeguards for investors had been a primary factor in the passage of Federal legislation and the establishment of the Commission.

(3) Competitive bidding was condemned as an interference with free enterprise. The logic of this argument is hard to follow, as a system of free enterprise is indissolubly founded upon the existence of competitive conditions, and regulations designed to preserve competitive conditions are not normally thought to constitute an interference with freedom.

(4) Further concentration in the underwriting and distribution of securities would, it was alleged, follow the adoption of competitive bidding. This condition would, it was said, result from inadequate investigations, due to an insufficient acquaintanceship of the underwriter with the issuer; the result would be the offer of excessive prices for issues, with consequent losses to underwriters; ultimately the failure of many underwriters would produce a concentration of their business in the hands of a few large firms. It was also stated that the small dealer would tend to be eliminated, as underwriters would find it advantageous to retain the distributing function themselves in an effort to cut their costs.¹⁰⁸ The Commission reached just the opposite conclusion with respect to the effect of its competitive-bidding rule; namely, that the rule would tend to prevent concentrating the underwriting of high-grade bonds in a few large investment banking firms, and that it would also tend to eliminate the private placement of security issues, both of which tend to exclude the small dealer. It was also noted that the adoption of competitive bidding would in no way lessen the underwriter's need for the services of the small dealer in effecting the quick turnover essential to successful underwriting, and that if the large investment banking firms could profitably perform the function of the small dealers, they would have taken that step years ago. On the other hand, competitive bidding would presumably make it possible for smaller independent bankers and dealers to organize syndicates and bid for the underwriting business.

In adopting the competitive rule, the Securities and Exchange Commission described many positive advantages which might be expected to attach to this

¹⁰⁸In their arguments against competitive bidding, investment banking representatives pointed out that concentration in underwriting is not the same as concentration in selling, and that concentration in the management of underwriting syndicates is less important than concentration with respect to the underwriting commitment, and that the latter is, in turn, less important than concentration with respect to selling and distribution. The selling function had always been performed by a relatively large number of dealers.

change in the machinery of security distribution: (1) Competitive bidding would provide a semi-automatic method of establishing the proper compensation for underwriting and selling securities, not only assuring the reasonable-

TABLE 46
GROSS UNDERWRITING SPREADS FOR UTILITY BONDS*
March 22, 1935-December 31, 1939

<i>Underwriting Spread in Points</i>	<i>No. of Negotiated Sales †</i>	<i>Per Cent</i>	<i>No. of Competi- tive Sales</i>	<i>Per Cent</i>	<i>Total</i>	<i>Per Cent</i>
Below 1.00	—	—	2	14.3	2	1.2
1.00 - 1.24	1	0.6	4	28.7	5	2.9
1.25 - 1.49	—	—	3	21.4	3	1.7
1.50 - 1.74	—	—	1	7.1	1	0.6
1.75 - 1.99	3	1.9	3	21.4	6	3.5
2.00 - 2.24	83	52.2	1	7.1	84	48.5
2.25 - 2.49	17	10.7	—	—	17	9.8
2.50 - 2.74	21	13.2	—	—	21	12.1
2.75 - 2.99	2	1.3	—	—	2	1.2
3.00 - 3.24	12	7.6	—	—	12	6.9
3.25 - 3.49	1	0.6	—	—	1	0.6
3.50 - 3.74	5	3.1	—	—	5	2.9
3.75 - 3.99	—	—	—	—	—	—
4.00 - 4.24	7	4.4	—	—	7	4.0
4.25 - 4.49	—	—	—	—	—	—
4.50 - 4.74	1	0.6	—	—	1	0.6
Over 4.75	6	3.8	—	—	6	3.5
Total	159	100.0	14	100.0	173	100.0
Private Placements	46	—	2	—	48	—

Unweighted average spread of 159 negotiated sales 2.49 points

Median spread of 159 negotiated sales 2.00 points

Unweighted average spread of 14 competitive sales ‡ 1.33 points

Median spread of 14 competitive sales ‡ 1.24 points

Unweighted average spread of 173 underwritten issues 2.39 points

Total private placements—48

† The underwriting spread for substantially all negotiated sales was the low figure in each bracket.

‡ If special fee paid to underwriters of Lowell Gas Light Co. bonds were included the median spread would be 1.28 points and the unweighted arithmetic mean would be 1.40 points.

* Source: Securities and Exchange Commission, Public Utilities Division, *The Problem of Maintaining Arm's-Length Bargaining and Competitive Conditions in the Sale and Distribution of Securities of Registered Public Utility Holding Companies and Their Subsidiaries*, p. C-22 (1940). From *Security Issues of Electric and Gas Utilities, 1935-1939*.

ness of such payments but also relieving both the Commission and the company of the burdensome and often disappointing proceedings involved in determining questions of affiliation and the reasonableness of payments to affiliates. (2) Competitive bidding, on the basis of experience, promised to effect

the raising of capital at substantially lower costs than might be expected from noncompetitive placements. (See Table 46.) (3) Competitive bidding would tend to eliminate the existing concentration in the underwriting and sale of utility securities and afford equality of opportunity with respect to such business, both between large and small investment bankers and dealers and between investment bankers and institutional investors. (4) Competitive bidding might be expected to dissolve the continuing relations between investment banking houses and large corporations, which had often resulted in so-called "banker domination" and resulted in the imposition of unsatisfactory and costly terms upon issuing corporations. (5) As a collateral advantage, the Commission noted that competitive bidding might be expected to eliminate the last-minute tendering of unexpected offers by investment bankers who had had no prior connection with the transaction, a practice having a disorganizing influence both on the investment bankers and the issuing corporation,¹⁶⁹ for if the new offer should be accepted the first investment banker would be uncompensated for the time expended in arranging the terms of the sale, and if the offer should be rejected, the officers of the corporation would risk being charged with negligence. (6) Finally, the Commission called attention to the fact that competitive bidding is a practical program, which has worked satisfactorily with respect to the security issues of public utility companies and railroads.¹⁷⁰

In conclusion, it may be said that the requirement of competitive bidding by the Securities and Exchange Commission is less an instance of governmental control than one of fostering free enterprise. The Commission's attempt to enforce competition in the investment banking field is comparable to that of the Antitrust Division and the Federal Trade Commission with respect to trade and industry generally. The policy of maintaining competition with respect to the financial relations between public utility holding companies and their subsidiaries on the one hand and investment banking houses on the other has been prescribed by Congress; competitive bidding is simply the means by which the Commission seeks to give effect to that statutory policy.

¹⁶⁹ For an example of such influence, see *Report on the 1940 Financing of San Antonio Public Service Company and Columbus and Southern Ohio Electric Company*. (Holding Company Act Release No. 2612 [1941].)

¹⁷⁰ Since 1870, Massachusetts has required, with certain exceptions, that the stock of gas and electric companies not taken by stockholders under their pre-emptive right should be sold at public auction, and since 1919, gas and electric utilities have been required to invite competitive bids when issuing bonds. In 1918 and in 1928, the Indiana Commission required certain public utility companies to sell their securities thereafter at public auction. In 1935, the commissions of New Hampshire and the District of Columbia adopted standing orders requiring competitive bidding. Since 1926 the Interstate Commerce Commission has required competitive bidding for equipment-trust obligations, and in 1939 the Federal Power Commission adopted a regulation requiring competitive bidding. (Holding Company Act Release No. 2676 [1941].)

CHAPTER XXI

REGULATION OF SERVICE

1. SCOPE AND CONTENT OF SERVICE REGULATION

The regulation of service rests upon the cardinal obligations of utility companies to render safe, adequate, and continuous service without discrimination. It begins with the establishment of the public utility enterprise, in the requirement of a franchise or a certificate of convenience and necessity, and is operative with respect to all extensions of service and all withdrawals or abandonments of service. Regulatory authorities have quite generally adopted "standards" to which the utility's service must conform.

As in other fields of regulation, the keeping of accurate and adequate records is of primary importance and is usually prescribed in commission regulations. Utilities are commonly required to furnish certain types of information to consumers: they must maintain on file a schedule of their rates and charges and their rules and regulations; certain information must be available with respect to the reading of meters and the calculation of bills. Regulatory supervision extends to the provisions with respect to the charges, deposits, and refunds that are, or may be, required. And finally, the authorities require complete information with respect to accidents and the measures adopted to prevent their recurrence.

2. CARDINAL OBLIGATIONS

DUTY TO SERVE. The duty to serve is a cardinal obligation imposed upon all public utilities. Unlike other businesses whose responsibilities to their customers are based upon contractual relations, public utilities are under a legal obligation to serve without respect to any prior relation with the consumer.¹ The duty to serve, originally a common-law obligation but now incorporated in most utility statutes and in commissions' rules and regulations, rests upon the fact that the consumer is peculiarly dependent upon a particular utility to satisfy his requirements with respect to an essential service.

The extent of the utility's duty to serve is ordinarily defined in its charter or franchise and becomes operative when the utility actually exercises its charter rights.² Where the utility has made no profession of service, it would appear to be under no duty to serve.³ However, if the utility has actually gone beyond its franchise or charter, and professed to render a more extended service, it may be required to serve beyond the terms of the franchise as strictly interpreted.⁴

The obligation to serve is not an obligation to which no exceptions exist.

¹ *Alabama Water Service Co. v. Wakefield*, 231 Ala. 112, 163 So. 626 (1935).

² *Rowland v. Saline River R. Co.*, 119 Ark. 239, 177 S.W. 896 (1915).

³ *I.C.C. v. Oregon-Washington R. & Nav. Co.*, 288 U.S. 14, 35 *et seq.* (1933).

⁴ *Hatch v. Consumers Co.*, 17 Idaho 204, 104 Pac. 670 (1909); *Ozark Power & Water Co. v. Comm.* 287 Mo. 522, 229 S.W. 782 (1921).

The inability of the company to perform the service demanded by the public is normally an adequate excuse for a failure to serve.⁵ Ordinarily, the lack of a valid franchise or charter authorization will be deemed sufficient evidence that the company is unable to perform the service.⁶ Whether a utility may plead labor difficulties in extenuation of its inability to serve depends upon whether the company has made reasonable effort to settle the difficulty or to provide substitute workers.⁷ But the inadequacy of present plant and facilities to meet the demands for service does not normally relieve the company of its obligation; it must make the necessary enlargements.⁸ Similarly, a shortage of supply (commonly of natural gas or water) will not excuse the company from fully supplying its territory if it is able to add to its supply.⁹ Where a duty to serve exists, a utility is not exempt from the full performance of that duty merely because its earnings from that service are inadequate, or even because its overall return is insufficient.¹⁰

Other circumstances may justify a utility's failure to render service. Where the customer, actual or prospective, has been at fault—through a violation of law, through a failure to observe the company's rules, by tampering with meters and other equipment, or by using defective equipment—the utility may be relieved of its obligation.¹¹ A utility will not ordinarily be compelled to supply service to its competitor,¹² and utilities have been permitted to refuse service to a submetering company.¹³ However, a wholesale company was not allowed to refuse to sell to one distributing company in order to protect

⁵ *Waukesha Gas & E. Co. v. Waukesha Motor Co.*, 190 Wis. 462, 209 N.W. 590 (1926); *Columbia R. Gas & E. Co. v. S.C.*, 27 F. (2d) 52 (C.C.A., 4th, 1928).

⁶ *Murray v. Comm.*, 27 Idaho 603, 150 Pac. 47 (1915). But where the company has already been performing the service without a franchise, the lack of franchise or charter powers will not be accepted as an excuse for not performing the same service for all on like terms. (*Chicago, B. & O. R. Co. v. Reed*, 114 Kan. 190, 217 Pac. 322 [1923].)

⁷ *Comm. v. International R. Co.*, 224 N.Y. 631, 120 N.E. 727 (1918).

⁸ *Railroad Co. v. Brown*, 84 U.S. 445 (1873); *Burr v. Seaboard Air Line R. Co.*, 92 Fla. 1139, 111 So. 281 (1927); *Comm. v. Lehigh Water Supply Co.*, P.U.R. 1929E, 118 (Pa., 1929); *Wisconsin State Rural Electrification Co-ordination Committee v. Wisconsin Gas & E. Co.*, 17 P.U.R. (N.S.) 31 (Wis., 1936).

⁹ *Bassett v. Franchetown Water Co.*, P.U.R. 1916B, 815 (N.H., 1916); *Comm. v. Iroquois Natural Gas Co.*, 189 App. Div. 545, 179 N.Y. Supp. 230 (1919); *Joyner v. Gaffey*, P.U.R. 1919E, 357 (Cal., 1919); *Mathias v. Pennsylvania Gas Co.*, 6 Pa. P.S.C. 530 (1923).

¹⁰ *Hocking Valley R. Co. v. Comm.*, 92 Ohio St. 9, 110 N.E. 521 (1915); *State v. Great Northern R. Co.*, 130 Minn. 57, 153 N.W. 247 (1915); *Rowland v. Saline River R. Co.*, 119 Ark. 239, 177 S.W. 896 (1915); *Puget Sound Traction, Light & P. Co. v. Comm.*, 100 Wash. 329, 170 Pac. 1014, (1918); *Commercial Club v. Chicago, M. & St. P. R. Co.*, 41 S.D. 314, 170 N.W. 149 (1918); *Boettcher v. Comm.*, 73 Colo. 46, 213 Pac. 114 (1923); *Colorado v. U.S.* 271 U.S. 153 (1926).

But where the additional service is requested merely for the added convenience of the public rather than for the public necessity, the questions of expense and relative benefit to the public may be of decisive importance. (*Kurn v. State*, 179 Okla. 440, 66 P. [2d] 52 [1937].)

¹¹ *Smith v. Western Union Telegraph Co.*, 84 Ky. 664, 2 S.W. 483 (1887); *Madregano v. Wisconsin Gas & E. Co.*, 181 Wis. 611, 195 N.W. 861 (1923); *Hawkins v. Vermont Hydro-Electric Corp.*, 98 Vt. 176, 126 Atl. 517 (1924); *Wiegand v. Alabama Power Co.*, 220 Ala. 620, 127 So. 206 (1930). But the mere fact that the company itself did not make the installation does not warrant a refusal to supply service. (*Hotels Statler Co. v. N.E. Tel. & Tel. Co.*, P.U.R. 1927B, 579 [Mass., 1926].)

¹² *Salisbury & S. Ry. Co. v. Southern Power Co.*, 179 N.C. 330, 102 S.E. 625 (1920).

¹³ *Lewis v. Potomac Electric Power Co.*, 62 App. D.C. 63, 64 F. (2d) 701 (1933); *Florida Power & Light Co. v. Malcolm*, 107 Fla. 317, 144 So. 657 (1932).

from competition a subsidiary distributing company,¹⁴ and a private company was ordered against its will to supply a wholesale service to rural electric co-operative associations.¹⁵

ADEQUACY OF SERVICE. What constitutes adequate service depends upon the requirements of consumers and the position of the company. It might better be said that the company is obliged to render "reasonably adequate" service. This does not contemplate the highest quality of service that is technically available, but only such service as is reasonable in consideration of the demands of the public, the cost of the service, and the financial position of the utility. Indeed, adequacy of service—like safety, continuity, and nondiscrimination, as well as efficiency—depends upon many circumstances. It is related to the state of the industrial arts and a service once adequate may become inadequate through the availability of superior service. Likewise, the same service may be adequate and reasonable in one community but inadequate and unsatisfactory in another community.¹⁶

The requirement that service be continuous and free from avoidable interruptions is a part of the obligation to render an adequate service. The utility is expected to exercise reasonable diligence and foresight in maintaining its property to avoid unnecessary breakdowns and to effect speedy repairs. An unduly large number of even "unavoidable" interruptions will normally be interpreted as evidence that the utility has failed in its duty to afford adequate service.

SAFE, EFFICIENT, AND NONDISCRIMINATORY SERVICE. The duty of the utility to provide a safe service is in the nature of an absolute obligation; no deficiency in demand nor insufficiency in income excuses a failure to conform strictly to the prevailing standards of safety. A service which is not characterized by efficiency in conception and performance is not a satisfactory service.

Finally, the service which the utility performs must be free from discriminatory features. Discriminations which arise either from differences in charges or from differences in the quantity and quality of the service are alike forbidden. Most state statutes are quite explicit both in defining and prohibiting all types of unreasonable discrimination.

3. REGULATORY JURISDICTION

THE NEED FOR REGULATION. Regulation of service is as essential to the consuming public as the control of rates and charges. Indeed, the regulation of service may be more important, for consumers are generally more concerned with obtaining an adequate and satisfactory service than with the charge. All would agree that pure, wholesome water is more important than any difference in rates that might be necessary to make pure and healthful water avail-

¹⁴ *N. Car. Public Serv. Co. v. Southern P. Co.*, 282 Fed. 837 (C.C.A., 4th, 1922).

¹⁵ *Wisconsin State Rural Electrification Co-ordination Committee v. Wisconsin Gas & E. Co.*, 17 P.U.R. (N.S.) 31 (Wis., 1936).

¹⁶ *Kansas City So. Ry. Co. v. State*, 72 Okla. 38, 178 Pac. 662 (1919); *Chicago R.I. & P. Ry. Co. v. State*, 117 Okla. 175, 245 Pac. 656 (1926); *Canton-East Liverpool Coach Co. v. Comm.*, 123 Ohio St. 127, 174 N.E. 244 (1930); *A. & T. Motor Freight v. Comm.*, 125 Ohio St. 617, 184 N.E. 11 (1932).

able. An electric service that is subject to frequent interruptions and to fluctuating voltages makes the service unsatisfactory for lighting services or the operation of motors. A transportation or a communication utility which is unable to handle urgent demands for service is unsatisfactory and intolerable whatever the rates charged.

Regulation of service is an essential counterpart to the regulation of rates. Consumers are not benefited if rate reductions are accompanied by deterioration in the quality of service. Unless the commission specifies both the quantity and the quality of service which shall be afforded at the prescribed rates, the fixing of rates may become a mere gesture. Hence, jurisdiction over service is always coupled with jurisdiction over rates.

Commission jurisdiction over service is also requisite because questions of service regulation raise issues in which the public interest must take precedence over the interest of the private parties, either the company or its consumers, and such issues require the expert judgment of a specialized tribunal like the public service commission. Finally, commission regulation provides an inexpensive remedy for the consumer who is unable to obtain satisfaction from the utility with respect to the service which the company performs.

THE GENERAL CHARACTER OF REGULATORY SUPERVISION WITH RESPECT TO SERVICE. The preceding discussion of the jurisdiction of the public service commission has indicated sufficiently the scope of its powers with respect to service.¹⁷ The most notable gap in commission jurisdiction with respect to service concerns municipal enterprises. There appears to be no sufficient reason why publicly owned utilities should not be subject to the same degree of regulation with respect to service as private companies.

Commission supervision of service falls into three divisions. First, the commission is charged with responsibility for establishing service standards for each class of utility. Secondly, the commission is responsible for the enforcement of the companies' service obligations. And thirdly, the commission is concerned with certain special problems connected with service, of which the most controversial are those having to do with the extension or abandonment of service, and the rules and regulations adopted by the company. Except for the third category, the regulation of service involves little controversy and is only infrequently a source of litigation. Managements are anxious to render an adequate and satisfactory service, and the standards prescribed by commission authority are normally regarded as minimal.

The same limitations that apply to other commission regulations are operative with respect to service. A commission must conform to due process of law in its procedure; orders may not be issued without affording the company an opportunity to present its case. As in other phases of regulation, the company is protected against those orders which would work a confiscation of its property. But the mere fact that a utility is unable to earn an adequate return is not in itself an excuse for a failure to provide an adequate service.¹⁸

¹⁷ Chapter VI. See particularly Chart 4.

¹⁸ A utility must first conform to the commission's order with respect to the service standards; if, after the exercise of due economy and after such rate increases as the commission may be willing to grant, it is unable to recover the cost of the service, the utility may appeal to the commission for an order modifying the requirements with respect to the unprofitable service.

4. SERVICE STANDARDS

The standards for service have been developed jointly by the commissions, the companies, the engineering and technical associations, and the Bureau of Standards. Standards with respect to different utilities have been promulgated by a majority of the state commissions, and model standards have been drawn up by the Bureau of Standards.

The determination of what service standards shall be established presents both engineering and economic questions. It also requires a consideration of the relations which have prevailed between the public and its utilities. The typical "standards" for utility companies normally cover at least six groups of related problems: (1) the provision, operation, and maintenance of plant and equipment; (2) the measurement of the service and the accuracy of meters; (3) the voltage constancy and standard frequency for electric companies, the pressure and heating content of gas, the pressure and purity of water, the speed and accuracy of communications, and the frequency and regularity of transportation service; (4) the records to be maintained by the utility; (5) the information which the company must furnish to consumers; and (6) the handling of complaints.

STANDARDS FOR ELECTRIC SERVICE. The adequacy and efficiency of electric service are very largely determined by the company's central station operation, the transmission and distribution system, the energy measuring and utilization devices, and the general relations of the utility with consumers. All of these matters must be covered in the prescription of standards.

General provisions. Bureau of Standards recommendations begin with certain general observations.¹⁹ The commission's power, either upon complaint or upon its own motion, is reserved to alter or amend any of the company's rules and regulations or any of the standards promulgated. It is noted that the rules and regulations approved do not relieve the company from its duties under the laws of the state.

Operations and maintenance. Each utility is required to have and maintain its entire plant and system "in such condition as will enable it to furnish safe, adequate, and continuous service within its hours of operation." All parts of the plant are required to be constructed, installed, operated and maintained in accordance with "accepted good practice." Provision must be made for inspection of its properties by the utility with "reasonable frequency." The utility is charged with complying with safety code rules. And the company is required to make certain reports to the commission with respect to its plant and equipment, their condition, and the inspections that have been made.²⁰

Measurement of service and accuracy of meters. The standards with respect to the measurement of service are extremely important. Every utility furnishing metered electric service is required, unless excused by the commission, to "provide for and have available such meter laboratory, standard meters, instruments, and other equipment and facilities as may be necessary to make

¹⁹ Bureau of Standards, *Standards for Electric Service*, Circular No. 56 (1923).

²⁰ *Ibid.*, pp. 221-222.

the tests required by these rules.' And if the utility establishes and maintains a standardizing laboratory, periodic inspection must be made by the commission of the instruments and methods in use, and provision is made whereby the laboratory, under commission supervision, may certify meters and instruments.

Accuracy requirements are specified for all meters and measuring instruments. It is recommended that no meter that registers with no load ("creeps"), and that no watt-hour meter that has an error in registration of more than plus 2 or minus 4 per cent at light load, or plus 2 or minus 2 per cent at heavy load, be placed in service or allowed to remain in service.²¹

Elaborate stipulations govern the testing of meters. All tests provided by the rules must be made with the meter in its permanent location on the customer's premises under actual local conditions of operation. It is commonly provided that all meters shall be tested and adjusted to register accurately within the specified limits at the time of installation. Periodic tests of watt-hour and demand meters are also required, the frequency of testing depending upon the type and capacity of the meter, varying from every six months for large meters to four years for smaller meters. Each utility must make a test of the accuracy of a meter upon request without charge to the customer, provided the customer does not request such a test more frequently than once a year.²² Each utility is required to keep a full record of all its meters, of the dates of installation and removal, and of all tests performed.²³

Voltage and frequency. The regulation of voltage to maintain a reasonable degree of uniformity is the principal criterion by which the public judges the general excellence of electric service. A failure to maintain a proper regulation of voltage affects directly the quality of service and may significantly reduce its commercial value. The candlepower of incandescent lamps varies widely with voltage fluctuations, and where variations are large, undue lamp breakage may result. Voltage fluctuations also affect the speed, capacity, temperature, and starting torque of motors.²⁴

The recommended standards specify that each utility shall adopt a standard nominal voltage, or standard nominal voltages, as may be required by its distribution system and the character of the service which it renders. For lighting service, it is recommended that variations in voltage shall be not more than 5 per cent above or below the nominal voltage adopted; and that for power service, the voltage variation shall not exceed 10 per cent above or below the standard nominal voltage. Each utility should be required to make a sufficient number of voltage surveys to indicate the character of the service

²¹ A light load is defined as approximately 5 to 10 per cent of the greatest capacity of the meter; a heavy load, as not less than 60 per cent or more than 100 per cent of the rated capacity of the meter.

Two methods of determining the average error of a meter are recommended: Method A, one-fifth the algebraic sum of (1) the error at light load, (2) three times the error at normal, and (3) the error at full-rated capacity; or Method B, one-half the algebraic sum of the error at light load and the error at heavy load. (*Ibid.*, pp. 222-225.)

²² It is provided also that a customer may, on payment of the fee, obtain a test of his meter by an inspector employed by the commission, and if the meter is found to be more than 4 per cent fast the amount of the fee must be refunded to the customer and collected from the utility company. A utility may also request that the commission test its meters.

²³ *Ibid.*, pp. 225-228.

²⁴ *Ibid.*, pp. 10-11.

furnished to each part of its distribution system and to satisfy the commission upon request of its compliance with the voltage requirements.²⁵

Information to customers. Each utility should provide some method of informing its customers as to how meters are read, and how the bills are calculated. The bills should show the dates on which meter readings were taken, the meter readings, and the methods by which the charge is calculated. It is recommended that each utility be prepared to render its customers reasonable assistance in securing the proper electric-consuming instruments and that fullest information be available as to the various kinds of service which the utility is prepared to render. And of course, the utility should be required to keep on file a schedule of its rates, its rules and regulations, and other provisions governing its relations with consumers.²⁶

Rules and regulations. The approved standards also cover the rules and regulations governing charges, deposits, and refunds. It is provided that when a meter is tested at the request of a customer and found to be more than 4 per cent fast, the company shall refund to the customer an amount equal to the excess charged incorrectly for a period equal to one-half of the time elapsed since the last previous test but not to exceed six months. And when a meter is tested at the request of the customer and found to be more than 4 per cent slow the company may make a similar charge to the customer for the kilowatt-hours incorrectly metered. The charges for testing of meters are also stipulated. Utilities are commonly permitted to require any customer or prospective customer to make a cash deposit as an assurance that the utilities' bills for service shall be promptly paid, the deposit to be returned with interest to the consumer when his relations with the utility terminate.²⁷

Accidents. The service standards also provide that the utility shall keep full records with respect to all accidents and all complaints, and it shall have station records of the operation of its equipment, the characteristics of its load, and all interruptions to service.²⁸

STANDARDS FOR GAS SERVICE.²⁹ *Introduction.* The establishment of standards for gas service, as for other utilities, is not merely a matter of regulation by public authority; it is in reality a business arrangement between the utility and its customers. It is the purpose of the rules to define good practice which can normally be expected, to insure adequate service, to prevent unfair charges to the public, to protect the utilities from unreasonable demands, and to embody the results of co-operation by the utilities and the regulatory authority in defining the conditions under which service shall be rendered.³⁰

General service provisions. The Bureau of Standards' recommendations with respect to general service provisions cover such matters as the maintenance of plant and equipment, interruptions of service, accidents, complaints, information for customers, meter readings and bill forms, and changes in the character of service. Other standards are concerned with the accuracy of meters and their testing, customer relations, and the rules and regulations adopted by

²⁵ *Ibid.*, pp. 229-231.

²⁷ *Ibid.*, pp. 231-232.

²⁹ Bureau of Standards, *Standards for Gas Service*, Circular No. 405 (1934), p. 1.

³⁰ *Ibid.*, p. 123.

²⁶ *Ibid.*, pp. 228-229.

²⁸ *Ibid.*, pp. 231, 232.

the companies. These so closely parallel the specifications respecting electric service that no further discussion is necessary.

Qualitative standards for gas. (1) Volumetric versus heating-value standards. The consumption of gas is measured by a meter which records the volume of gas used in terms of cubic feet. In the early years of the industry's development, gas was used almost exclusively for illumination and its quality was judged by its candlepower. At present, gas has almost completely lost its lighting market, and gas is judged qualitatively by its heating content.³¹ The heating value of gas is designated in terms of British thermal units or therms,³² and when gas is sold at a certain rate per unit of volume, the specification of its heating value has exactly the same significance as the determination of price. Although the standards of heating value at volumetric rate are so intimately associated that a discussion of one necessarily involves the other, regulatory authorities and utility companies have often dealt with questions of price and standards of heating value as though these were independent questions.

Since the divorce of the question of standards of heating value and the appropriate volumetric rate creates a source of confusion for consumers and regulatory authorities and a possible source of unfairness for the utility or its consumers, the Bureau of Standards has recommended that gas be sold at definite rates per heat unit. There is much to recommend this method of pricing. First, the complex problem of standards for heating value and rates is resolved into two quite simple ones: "... the engineering problem of how to deliver energy (B.T.U.) to the customer at a minimum total cost to the gas company and the rate-making problem of equitably charging for the energy (B.T.U.) delivered without confusing the public or discarding the volumetric meter."³³ Secondly, the identity of interest of the utility and the public in the most economical delivery of gas is brought to the fore. Thirdly, necessary changes in the heating value of gas can be effected without confusion and without the delays incident to rate changes. Fourthly, the justification for changes in heating value and rates can be more readily judged by both the regulatory authorities and the consumers. And finally, rate comparisons between different utility companies may be more accurate.

(2) Testing equipment. Each utility selling gas must provide and maintain calorimetric equipment installed in a testing station, located preferably not less than one mile from any gas manufacturing plant, as selected by the utility and approved by the commission. The utility must also maintain appropriate equipment for testing the purity of the gas which it sells and the pressure at which it is distributed.³⁴

(3) Heating-value requirements. The Bureau of Standards recommends that the authorized standard for each community shall be the standard of the heating value in effect when the existing schedule of rates was established, but

³¹ Other matters that are significant in judging the quality of gas service include the purity of the gas, the uniformity of its composition, and the uniformity of the pressure at which it is delivered.

³² A British thermal unit (B.T.U.) represents the quantity of heat necessary to raise the temperature of 1 pound of water 1 degree Fahrenheit at or near its point of maximum density (39.1° F.). A therm is equal to 100,000 B.T.U.

³³ *Ibid.*, p. 16.

³⁴ *Ibid.*, pp. 131-135.

that the authorized standards shall be subject to change at the option of the utility, subject to commission approval. In petitioning for a change in the heating-value standards the utility should present to the commission a complete statement of the reasons for making the change and appropriate data with regard to the cost and character of any alterations in its own plant and equipment and in the equipment of its consumers. The utility should also submit a new schedule of rates and charges of such a character "that the cost of service per heat unit delivered shall not be increased to consumers of any class, and that the relative cost of service to the customers of any two classes shall not be altered by more than 2 per cent." It is recommended that the utility be required, without charge to its customers, to make such adjustments and replacements of appliances and parts as may be necessary to insure that all consumers shall have safe, efficient, and satisfactory service. And it is stipulated that the heating value shall be maintained with as little deviation as practicable and that the average total heating value on any day should not vary by more than 5 per cent above or below the authorized standard.³⁵ It is recommended that the utility be required to make heating-value tests at regular intervals of not less than forty-eight hours in the case of natural gas and at least once daily in the case of manufactured gas. If a thirty-day average of heating value is found to be less than the authorized standard by 2 per cent or more, the utility should be required to make a proportionate adjustment in the rates charged to consumers.³⁶

(4) Purity requirements. The specifications with respect to purity of gas are concerned with the presence of hydrogen sulphide, sulphur, and ammonia. It is recommended that all gas be required to be free from hydrogen sulphide. The total permissible amount of sulphur should not exceed 20 grains in each 100 cubic feet. It is stated that manufactured gas should not contain more than 5 grains of ammonia in each 100 cubic feet.³⁷

(5) Gas-pressure requirements. Each utility should be required to divide its territory into pressure districts and to specify for each district the maximum pressure which will be maintained. The pressure at the outlet of any customer's service meter should never be less than one-half of the maximum pressure specified for the district.³⁸

STANDARDS FOR TELEPHONE SERVICE.³⁹ Such are the technical complexities in telephone service and in the plant and equipment with which the service is supplied, and such are the variations in the service requirements of different communities, that it is difficult, if not impossible, to establish precise standards for telephone service. However, many communities are supplied with telephone service from relatively small companies and the need for service standards here is quite as urgent as in other utility industries. The larger communities and the more populous sections of the country are served by large operating companies that are members of the Bell system, and in general their service

³⁵ The heating value of gas depends upon its composition and it is usually not practicable to require absolute uniformity of composition. The composition of gas also determines its density, the volume of air required for complete combustion, and so-called "ignition velocity," all of which are important in the satisfactory adjustment of appliances.

³⁶ *Ibid.*, pp. 131-133.

³⁷ *Ibid.*, pp. 133-134.

³⁹ Bureau of Standards, *Telephone Service*, Circular No. 112 (1921).

³⁸ *Ibid.*, p. 134.

standards are in excess of any minimums that might be specified by regulatory authorities.

The elements of telephone service. It is easier to specify the principal elements of telephone service than to indicate precisely how these elements are to be measured or what standards should be required with respect to each.

Adequacy of service development is a primary criterion of good telephone service. Each locality should be able to obtain such classes of service as will reasonably cover its needs. Each locality normally requires both local and toll service. Public telephone service is usually required in addition to subscriber service, and occasionally public convenience will require that public stations be located at points where the financial returns are less than the cost. As communities increase in size, corresponding increases in the volume of business bring increases in costs, and there are commonly also improvements in the grade of service through reducing the number of stations per line, the introduction of selective ringing, and other changes. Adequacy of service development is definitely dependent upon the adequacy of plant facilities, which must normally be provided in advance of the demand for service. As applied to operators, adequacy implies that there must be a sufficient number of operators and that they must be competently trained to handle the traffic.⁴⁰

The *quality of speech transmission* is critical in judging the quality of telephone service. The quality of speech transmission depends upon the degree of loudness with which speech is transmitted, the accuracy with which the speech is reproduced, the naturalness and intelligibility of the speech, and upon the degree of uniformity with respect to these three characteristics. Good quality of speech transmission is primarily dependent upon the quality and condition of the physical plant and facilities, and the care that has been taken to prevent disturbances and noises which would interfere with speech transmission.⁴¹

Dependability of speech transmission and dependability of operation are indispensable to good service. Plant design, plant construction and installation, and plant maintenance, as well as the reliability of the operating force, are the determinants of dependability. The problem is not merely an engineering one, but like other attributes of good service, involves economic elements; the dependability of the service can be increased, but each improvement brings increases in costs, and the economic problem is to balance the importance of enhanced dependability against the increases in costs.⁴²

The *quality of operation* is judged in terms of the speed, accuracy, and secrecy of the telephone service. The speed of service is determined by plant design, plant conditions, the number and training of operators, the development of economical routines for handling calls, including the designation of special operators to handle special types of calls.⁴³ Within limits, increased speed of service can be supplied where subscribers are willing to pay the cost. Accuracy of operation is dependent upon the accuracy of the telephone directory, the accuracy of the operators, the accuracy of plant records, the condition

⁴⁰ *Ibid.*, pp. 159-163.

⁴¹ *Ibid.*, pp. 163-168.

⁴² *Ibid.*, pp. 169-170, 180.

⁴³ Information calls, calls regarding repairs, complaints with respect to operations, and other irregular calls should be handled by special operators.

of plant equipment, and perhaps chiefly, on the care exercised by the calling party. Secrecy is important in telephone service and can be assured by operating rules which forbid listening except when absolutely necessary and by making it illegal for those who overhear a telephone conversation to divulge any information so obtained.⁴⁴

Satisfactory telephone service requires *safety* for subscribers, for employees, and for the public generally. From the standpoint of safety alone, special design, construction, construction methods, and additional facilities may be required to meet special conditions.⁴⁵

Good relations with the public are more important for telephone utilities than for other utility enterprises. Telephone service involves intimate contacts between the company's employees and those who use the service. The telephone company's property occupies not only the public ways and streets but also private property. Telephone users frequently require instruction in the use of the service and assistance in locating parties and completing their calls. And the telephone company should recognize its obligation to protect subscribers from those sources of annoyance which are peculiar to the telephone, whether arising from operating conditions, or from the abuses of other subscribers.⁴⁶

Service standards. The service standards which may be laid down for telephone companies may be briefly, if somewhat indefinitely, summarized. For the most part, commissions have been somewhat chary in fixing service standards, but those which have fixed such standards have adopted the following specifications:

(1) Standards of construction. The National Electric Safety Code of the Bureau of Standards has usually been adopted to govern construction standards. These have been drafted to reduce the hazards to life and property, to emphasize the necessity of guarding communication wires from contact with power lines, and to protect company employees.

(2) Maintenance of plant. Telephone companies are required to make provision for the proper upkeep and repair of plants, with such inspections and tests as are necessary to assure the public of a reasonably uniform grade of service, and the employees and subscribers a reasonable protection from hazard.

(3) Adequacy of service. The company is under obligation to provide sufficient switchboard capacity and an adequate operating force to handle the traffic at all times without unreasonable delay, to place reasonable limits upon the number of subscribers served by a single line, and to hold toll lines available for toll purposes.

(4) Dependability of service. The company is expected to make such provision against damages by fire and storm and other emergencies, increases in traffic, et cetera, as will avoid any serious impairment in service.

(5) Speed of service. The size of the exchange, the character of the equipment, and the operating force should be planned to afford reasonable speed in the answering and completion of all calls. The development of standard operating practices, including uniform phraseology and methods, should be

⁴⁴ *Ibid.*, pp. 169-180.

⁴⁵ *Ibid.*, pp. 181, 182.

⁴⁶ *Ibid.*, p. 182.

employed both to facilitate the handling of traffic and to avoid errors.

(6) Other standards. The company should be required to maintain appropriate records with respect to complaints and irregularities in service, and of course, the company is expected to publish and periodically revise directories which will enable the subscribing public to make the most efficient use of the service.

STANDARDS FOR WATER SERVICE. State commissions have been less active in the establishment of standards for water service than for other categories of utilities, presumably because the water-supply systems are usually publicly owned.⁴⁷ Where standards have been established, they parallel those for electric and gas utilities in most respects.

Two important standards. The two standards which are of primary importance with respect to the quality of water service are the purity of the water supply and the maintenance of pressure. *Purity* of water supply for domestic purposes is of such critical importance that not only the commissions, but the health officials of municipality and state make frequent and periodic tests of the water supply. Closely allied to the purity of the water supply, is the palatability of the water, and where standards have been established this has received attention. In many states, water utilities are required to follow definite routines for the flushing of hydrants and the dead ends of mains.

The maintenance of proper *pressure* is not only of significance to domestic and industrial consumers of water, but it is the determining factor in judging the adequacy of the water system for purposes of fire protection. Utilities are commonly required to maintain not only a sufficient storage capacity and a sufficient capacity in the distribution system, but they are also required to maintain, where necessary, such pumping equipment as will enable the utility to make immediately available the high pressures which are necessary for adequate fire protection.

STANDARDS FOR STREET RAILWAY SERVICE. Because of the wide variation in the financial resources of street railway companies and in the transportation needs of different communities, regulatory authorities have been hesitant to establish broad general standards of service with respect to urban and inter-urban transportation. The character of local transit service is such that it would be relatively easy for a commission to draw up the standards of good service that might be required of any given company, and even the riding public is quite competent to judge whether the service is satisfactory or not.

Those commissions which have drafted standards have properly placed emphasis upon the quality and character of the equipment with which the service is performed. Much of the regulation has been concerned with safety: the motive power and braking equipment, protecting rails and doors, headlights, the number of operators on each car, protection against collisions, emergency exits, and fire-protection measures. Other specifications with respect to equipment are concerned with the comfort of the riding public: at least one seat for every passenger carried during non-rush periods and sufficient floor space to avoid overcrowding during the rush hours, sanitation rules and restrictions on smoking, and the temperature to be maintained in closed cars. The hours

⁴⁷ See Table 1, p. 25.

during which service shall be rendered, and the frequency of service may also be readily specified with respect to each phase of the company's operations. The location of stops, proper signs, the requirement that stops be announced by name, and the rule that cars shall stop on signal are commonly part of the rules and regulations. There are the usual requirements with respect to records and reports—of the number of passengers carried on each route, of traffic surveys, of accidents and their causes and the preventive measures that have been adopted, and of complaints and their disposition.

5. ENFORCEMENT OF SERVICE REGULATIONS

Service regulations and service standards are of little significance unless there is adequate enforcement. In general, enforcement of service regulations has rested upon two procedures, the requirement of periodic and special reports from the companies to the commissions, and provision for inspections by members of the commission's staff. Chief assurance with respect to the maintenance of satisfactory service standards must rest upon the latter procedure, and is, therefore, directly dependent upon the adequacy of the commission's appropriations and the competence of its staff.

The grading of utility companies on their performance and on their conformity to service rules and standards has proved a helpful means of stimulating managements to maintain the highest possible standards. This technique seems to have been developed in Wisconsin and Illinois. In the beginning, grading standards were utilized confidentially by the commission to facilitate comparisons between companies and to interpret more readily the significance of the reports which the commission's inspectors filed. Subsequently the grades were released to managements and met with such gratifying attempts to improve service that the practice developed of making the service grades public. The utility's conformance to each rule and standard was graded by the inspector, and the different grades were weighted according to the importance of that rule or standard in terms of the overall character of the service rendered by the company. Table 47 indicates the weighting system used by the Wisconsin commission in grading gas and electric service.⁴⁸ In order to en-

⁴⁸ The following items formed the basis for the grading system utilized by the Illinois Commerce Commission:

"Electric Utilities:

1. Continuity of service
2. Voltage regulation
3. Handling of complaints
4. Accuracy of meter registration
5. Construction and maintenance
6. Adequacy of capacity
7. Provisions for emergency
8. Adjustment of bills
9. Billing
10. Extension policy
11. Promptness in furnishing new service
12. Courtesy of utility representatives
13. Testing of service and keeping of records

Gas Utilities:

1. Pressure (including continuity)
2. Heating value
3. Handling of complaints
4. Purity
5. Adjustment of appliances
6. Construction and maintenance
7. Adequacy of capacity
8. Provisions for emergency
9. Adjustment of bills
10. Billing
11. Extension policy
12. Promptness in furnishing new service
13. Courtesy of utility representatives
14. Testing of service and keeping of records."

(Bureau of Standards, *Technical Conference of State Utility Commission Engineers*, Miscellaneous publications, No. 58, pp. 19-20 [1923].)

hance the friendly spirit of emulation which the grading system developed, the Illinois Commission classified electric and gas companies into four groups, A, B, C, and D, according to the size of the community and the character of the service rendered, thus encouraging each utility in competition with other companies in its own class to achieve a high ranking position.

TABLE 47*
RULES AND GRADING WEIGHTS FOR GAS AND ELECTRIC SERVICE

Rule		Subject	Credit		Credit	
Gas	Elec- tric-		Gas	Rank	Elec- tric	Rank
			Per cent		Per cent	
....	14	Creeping meters .....	....	....	4	6
1	15	Accuracy of meters	7	4	7	3
....	16	Installation tests .....	....	....	5	5
2	17	Periodic tests	14	3	14	2
3	18	Meter-testing records	5	6	5	5
4	19	Meter-testing equipment	5	6	5	5
5	20	Request tests	4	7	4	6
6	21	Referee tests .....	....	....	....	....
7	22	Meter readings on bills	4	7	4	6
8	....	Heating value	21	1	....	....
9	....	Calorimeter equipment	7	4	....	....
....	23	Interruptions .....	....	....	18	1
....	24	Station records .....	....	....	6	4
10	25	Pressure and voltage variation	18	2	18	1
11	26	Pressure and voltage surveys	6	5	6	4
12	....	Purity	4	7	....	....
13	....	Complaint records	5	6	....	....
....	27	Information .....	....	....	4	6
		Total	100	....	100	....

* Source: Bureau of Standards, *Technical Conference of State Utility Commission Engineers*, Miscellaneous publications, No. 58, p. 8 (1923).

6. SOME PROBLEMS OF SERVICE REGULATION

THE ESTABLISHMENT OF SERVICE. No new utility undertaking may be inaugurated without the grant of franchise powers by the appropriate public authority. At the present time authorization to engage in a utility undertaking is conferred by the certificate of convenience and necessity, which is granted by the commission only after an investigation and finding that there exists a demand for utility service justifying the establishment of the enterprise and that those petitioning for the certificate are qualified to undertake the service.

All important extensions or changes in the character of service similarly require the prior approval of the commission.⁴⁹

RULES AND REGULATIONS. It is customary for utilities to prepare rules and regulations governing the rights and duties of both the company and its patrons. These rules and regulations, when filed with, and accepted by, the commission, acquire the status of a commission rule or order, and thereafter govern the relations between the utility and its patrons.⁵⁰ The rules and regulations are enforceable by the utility, even to the extent of declining to supply service to any customer, or prospective customer, who refuses to comply with their terms.⁵¹ Of course, no utility may include in its rules and regulations any provisions seeking to release itself from any of the duties or liabilities imposed by statute, commission order, or its public utility status.⁵²

EXTENSIONS OF SERVICE. The circumstances and conditions under which utilities will extend their service are frequent sources of controversy between the company and consumers. Commissions usually have statutory power to order companies to make extensions.⁵³ And the constitutionality of commission jurisdiction over extensions has been affirmed.⁵⁴ It would appear that a utility is under an obligation to extend its service only if the extension comes within its charter or franchise obligation or within its profession of service.⁵⁵

Extensions fall into three classes: the extension of service to new consumers within the territory already served, the extension of the service into new areas,

⁴⁹ See Chapter VII.

⁵⁰ *Re Napa Valley Elec. Co.*, P.U.R. 1925A, 724 (Cal., 1924); *Collins v. The Union Elec. L. & P. Co.*, P.U.R. 1930D, 446 (Mo., 1930); *Re Alabama Power Co.*, 4 P.U.R. (N.S.) 233 (Ala., 1934); *Henry v. Pennsylvania Edison Co.*, 27 P.U.R. (N.S.) 60 (Pa., 1939).

⁵¹ *Alabama Water Co. v. Knowles*, 220 Ala. 61, 124 So. 96 (1929); *Harvey v. Corporation Commission*, 102 Okla. 266, 229 Pac. 428 (1924); *Hawkins v. Vermont Hydro-Electric Corp.*, 98 Vt. 176, 126 Atl. 517 (1925); *Lewis v. Potomac Electric Power Co.*, 62 App. D.C. 63, 64 F. (2d) 701 (1933); *Vanderbilt v. Hackensack Water Co.*, 113 N.J. Eq. 166, 166 Atl. 298 (1933); *Leitner v. New York Tel. Co.*, 277 N.Y. 180, 13 N.E. (2d) 763 (1938).

⁵² *Re Liability Clauses in Rate Schedules of Gas and Electric Corporations*, 26 P.U.R. (N.S.) 373 (N.Y., 1938).

⁵³ *Bluefield Water Works & Improv. Co. v. Public Service Commission*, 89 W.Va. 736, 110 S.E. 205 (1921); *Commerce Comm. v. Chicago R. Co.*, 362 Ill. 559, 1 N.E. (2d) 65 (1936).

⁵⁴ *Woodhaven Gas Light Co. v. Comm.*, 269 U.S. 244 (1925). The company had challenged the commission's order requiring certain extensions on the ground that the return was inadequate and that the extensions would result in a confiscation of its property. While noting that the state could not compel a company to make large expenditures for extensions into new territory where the result would be to compel the company to use its property for the public convenience without just compensation—*Atlantic Coast Line R. v. N.C. Corp. Comm.*, 206 U.S. 1, 20, 23 et seq. (1907); *Missouri Pacific Ry. Co. v. Kansas*, 216 U.S. 262, 276 (1910); *Chicago & Northwestern Ry. Co. v. Ochs*, 249 U.S. 416, 421 (1919); *Norfolk Ry. v. Comm.*, 265 U.S. 70, 74 (1924)—the Court held that in the absence of clear proof that the additional territory could not be served except at a confiscatory return, the company was under an obligation to make the extensions as ordered and then to seek from the commission such adjustment of rates as should afford it a compensatory return.

⁵⁵ *Atchison, T. & S. F. R. Co. v. Comm.*, 173 Cal. 577, 160 Pac. 828 (1916); *Oklahoma Natural Gas Co. v. Corp. Comm.*, 88 Okla. 51, 211 Pac. 401 (1922); *Re Vance*, 115 Okla. 8, 241 Pac. 164 (1925).

If the company has assumed a charter obligation to afford service but has not actually offered the service in the territory, it may still be required to make the extension. (*Root v. New Britain Gas Light Co.*, 91 Conn. 134, 99 Atl. 559 [1916].)

There are cases which have held that the utility's obligation to extend service was not limited by its profession of service—*Schantz v. Madison Gas & Elec. Co.*, 19 P.U.R. (N.S.) 139 (Wis., 1937)—or by its franchise—*Comm. v. Georgia Power Co.*, 182 Ga. 706, 186 S.E. 839 (1936).

presumably those adjacent to the territory already served, and the performance of a different type of utility service. Cases involving the third type of extension are very rare, and it may be said that only under the most exceptional circumstances will regulatory authorities suggest that a utility undertake a different service from that which it has professed to perform. Extensions of the first type—that is, to new consumers within the territory served—seldom raise serious problems since the added cost to the utility is seldom large enough to make any significant difference in the adequacy of its return or in the rates which it may charge.

The most difficult problems are concerned with the second category of extensions, that is, those into new territory. In all such cases, the commission's judgment should be guided by a consideration of the public interest involved. The utility service should be made as widely available as possible, reaching the maximum number of prospective consumers. Clearly an extension should be required whenever it is possible for the utility to make it without imposing any additional burden on either its present consumers or on its investors. If the extension cannot be made without incurring costs which would impair the company's ability to serve existing consumers at present rates, then it may be proper to require the prospective consumers to share the costs of bringing the service to them. This is the program which has been quite generally followed with respect to the extension of service, particularly electric service, into sparsely populated rural areas. In a few instances, the commission may feel justified in ordering an extension which will result in imposing a part of the cost of the extension on those consumers who are already taking the service, usually in the form of a postponement of a rate reduction. If the advantage to the community at large arising from the extension of service to the new area is significant and if the possible or probable burden is relatively insignificant, the commission may feel justified in asking the company to bear the entire expense.

ABANDONMENTS AND WITHDRAWALS OF SERVICE. The abandonment of service by a utility or a withdrawal from a part of its service may normally take place only with the permission of the regulatory authorities.⁵⁶ Indeed, if the service has been unlawfully abandoned the commission may require its restoration if the public interest so requires.⁵⁷ Even the provision of a substitute service, such as the replacement of streetcars by motor buses, requires the sanction of the appropriate regulatory authorities.⁵⁸

The decision whether a utility shall be permitted to abandon a service must rest on the full consideration of the public interests involved. There is always a presumption against requiring the continuance of a service which fails to pay its way. Presumably the continuance of unprofitable services, whether it

⁵⁶ *Hocking Valley R. Co. v. Comm.*, 92 Ohio St. 9, 110 N.E. 521 (1915); *Norfolk & W. R. Co. v. Comm.*, 91 W.Va. 414, 113 S.E. 247 (1922); *Western & Atlantic R. v. Comm.*, 267 U.S. 493 (1925).

Even in the absence of statutory provisions, it has been held that the commission's permission is a prerequisite to the abandonment of a service. (*Kansas City S. R. Co. v. Comm.*, 175 Ark. 425, 299 S.W. 761 [1927].)

⁵⁷ *Thompson v. Boston & Maine R.*, 86 N.H. 204, 166 Atl. 249 (1933).

⁵⁸ *Columbia v. Tatum*, 174 S.C. 366, 177 S.E. 541 (1934); *Columbia v. Pearman*, 180 S.C. 296, 185 S.E. 747 (1936).

be service to a particular part of the territory served or an unprofitable form of service (such as the continuance of street railway operations by an electric power company), must impose a burden upon consumers of other categories of service, raising the question whether the continuance of the unprofitable service is not a discrimination against those who are thereby required to pay more than the full cost of the particular service which they receive. In accordance with previously noted principles, public policy may require the continuance of a service which appears to be of significance to the community where the burden thereby imposed upon other categories of service is of insignificant proportion.

A commission's authority to require a utility to continue a service which the company wishes to abandon is not without limit. No company can be required to continue operations if it is sustaining, and presumably will continue to sustain, a net loss from operations; to require a continuance under such circumstances would effect a taking of property contrary to the Fourteenth Amendment.⁵⁹ And presumably a utility which is rendering two different and distinct utility services may abandon a losing service even though the other service continues to be profitable.⁶⁰ However, a utility may not without the permission of the commission, abandon an unprofitable portion of its service while continuing to enjoy the benefits of its franchise or its charter.⁶¹ Nor may a utility withdraw its service because it is dissatisfied with the rates which it is permitted to charge or the rules and regulations under which it is compelled to operate. The following pronouncement by the Supreme Court indicates the sweep of regulatory authority in this respect:

"... If a state may require a public service company subject to its control to make reasonable extensions of its service in order to satisfy a new or increased demand, present or anticipated, ... obviously the latter may be compelled to continue to use present facilities to supply an existing need so long as it continues to do business in the state.

"The primary duty of a public utility is to serve on reasonable terms all those who desire the service it renders. This duty does not permit it to pick and choose and to serve only those portions of the territory which it finds most profitable, leaving the remainder to get along without the service which it alone is in a position to give. An important purpose of state supervision is to prevent such discrimination; ... and if a public service company may not refuse to serve a territory where the return is reasonable, or even in some circumstances where the return is inadequate but that on its total related business is sufficient, ... it goes without saying that it may not use its privileged position, in conjunction with the demand which it has created, as

⁵⁹ *Brooks-Scanlon Co. v. Comm.*, 251 U.S. 396, 399 (1920); *Bullock v. Comm.*, 254 U.S. 513, 520-521 (1921); *Railroad Comm. v. Eastern Texas R. R.*, 264 U.S. 79, 85 (1924).

⁶⁰ *Northern Illinois Light & Traction Co. v. Commerce Comm.*, 302 Ill. 11 (1922). But where a single franchise covers the operation of both utilities services, the utility may not be allowed to abandon the unprofitable service. (*Broad River Power Co. v. S.C.*, 281 U.S. 537 [1930].)

⁶¹ *Missouri Pacific Ry. Co. v. Kansas*, 216 U.S. 262, 279 (1910); *Chesapeake & O. Ry. Co. v. Comm.*, 242 U.S. 603, 607 (1917); *Puget Sound Traction Co. v. Reynolds*, 244 U.S. 574 (1917); *Fort Smith Traction Co. v. Bourland*, 267 U.S. 330 (1925).

a weapon to control rates by threatening to discontinue that part of its service if it does not receive the rate demanded.”⁶²

DISCRIMINATION. Discrimination in service is quite as objectionable as discrimination in rates and is equally forbidden to the utility. The obligation to render nondiscriminatory service applies to all the categories and attributes of service—extensions, preferences during a shortage of supplies, preferences with respect to particular classes of persons, abandonments, et cetera.⁶³

In conclusion, the supervision of service—despite the fundamental importance of safe, adequate, continuous, and nondiscriminatory service—has never taken the center of the regulatory stage. Utility managements have quite generally sought to maintain service standards substantially in excess of those required by commission prescription. The commission’s activities are commonly confined to routine inspections and test. When customers do submit complaints, the commission has rarely been required to do more than bring the matter to the attention of the company to obtain a prompt and satisfactory settlement. Formal commission proceedings and court litigation have been confined almost wholly to questions of extensions and abandonments.

⁶² *United Fuel Gas Co. v. Railroad Commission of Kentucky*, 278 U.S. 300, 308-309 (1929).

⁶³ *Industrial Gas Co. v. Comm.*, 135 Ohio St. 408, 21 N.E. (2d) 166, 168 (1939).

See also *Alabama Water Co. v. Knowles*, 220 Ala. 61, 124 So. 96 (1929); *May Department Stores Co. v. Union Electric Light & Power Co.*, 341 Mo. 299, 107 S.W. (2d) 41 (1937); *Railway Exchange Bldg. v. Light & Development Co.*, 341 Mo. 334, 107 S.W. (2d) 59 (1937); *Salisbury & S. Ry. Co. v. Southern Power Co.*, 179 N.C. 18, 101 S.E. 593 (1919).

FEDERAL POWER COMMISSION

I. DEVELOPMENT OF A FEDERAL POWER PROGRAM

The present power program is a result of a long process of growth. It is a part of the federal activities pertaining to projects for navigation improvement and for the reclamation and irrigation of land. It has also been motivated by a desire to assure adequate control over hydroelectric developments and to protect the public interest by making electric power widely available at the lowest possible cost. The federal power program is represented by a variety of hydroelectric developments that have been undertaken directly by the national government and by the development of an extensive scheme of regulatory control over the development of hydroelectric projects by private corporations.

An outstanding characteristic of the projects undertaken by the Federal Government has been the fact that they have been multiple-purpose projects, that is, projects which have sought the economies potential in an integration of flood control, navigation improvement, irrigation, and power development in a common undertaking. Full economic exploitation of the by-product power available at federal hydro-projects was first practiced by the Bureau of Reclamation, the power being marketed to enable water for irrigation purposes to be sold more cheaply. Navigation improvements and, more recently, flood-control projects, have also created opportunities for the profitable development of hydroelectric power. And certain federal projects have been planned on a broad and comprehensive basis for the development of an entire region, the programs in the Tennessee Valley and along the Columbia River being outstanding examples of broadly conceived multiple-purpose undertakings. The present urgent necessity for industrial power for the defense industries has led to an enlargement in, and to an acceleration in the installation of, generating capacity at various federal undertakings.

The Federal power program as it has concerned the development of hydroelectric resources by private corporations has had three objectives. First, no hydroelectric developments may be undertaken or dams constructed without the prior approval of the War Department, the purpose being to avoid interference with navigation or with the navigable capacity of any waters subject to the jurisdiction of the United States. Secondly, federal control has sought to assure that each project shall conform to a rational plan for the development of all of the potential power resources of a river and that it shall further, and not handicap, other federal objectives such as flood control and navigation improvements. Thirdly, federal regulation has been instituted and broadened for the purpose of protecting the consumer's interest, to make electric energy available as widely as possible at the lowest feasible cost. Hence, even when hydroelectric developments have been undertaken by private companies, there has been provision for the assertion of Federal regulatory jurisdiction where state regulation is lacking.

2. THE ORGANIZATION OF THE FEDERAL POWER COMMISSION

THE EX OFFICIO COMMISSION. The Federal Water Power Act of 1920 provided for the establishment of a Federal Power Commission composed of the Secretaries of War, Interior, and Agriculture.¹ It was the purpose of Congress in establishing the Commission to "place upon it responsibility for all the water-power activities of the Federal Government in order to provide for a common policy in investigation and administration, to avoid duplication of work, and to secure a co-ordinated plan of investigative work."²

The statute made provision for only one employee of the Commission, namely, an executive secretary. Otherwise the work of the Commission was to be performed by and through the Departments of War, Interior, and Agriculture; a headquarters staff was to be established by loaning to the new Commission engineering, technical, clerical, and other personnel.³ This situation remained unchanged until 1928, when the civilian employees previously assigned to the Commission's work from various bureaus and other departments were formally transferred to the Commission's rolls.⁴

The ex officio commission failed to function as Congress had contemplated. The members of the Commission, carrying the full responsibilities of Cabinet posts and being fully occupied with the supervision of their own departments, had little time for the discharge of their responsibilities under the Federal Water Power Act. Infrequent meetings were held for the purpose of determining matters of policy and approving license applications that were presented by the staff. However, the principal weaknesses in the functioning of the Commission were associated with the inadequacy of its staff. Long delays were encountered in approving applications for licenses, and very often applications were approved without the thorough and painstaking investigation which the law contemplated. The very important accounting work, especially that leading to the determination of the net investment cost of hydro-electric projects, could not be carried on by the small staff. Thus throughout the ten years that the ex officio Commission functioned, virtually all regulatory functions other than the granting of licenses went unexercised. The responsibility for this nonperformance rests squarely with the Congress, for despite requests beginning in the Commission's first annual report, Congress failed to make adequate appropriations, although under the Federal Water Power Act provision was made for assessing the costs of administration against the companies holding licenses.⁵

A FULL-TIME COMMISSION. Under an Act approved June 23, 1930, the Federal Power Commission was reorganized as an independent commission composed of five full-time commissioners appointed by the President for five-

¹ Prior to the passage of the Act, the administration of the various federal laws governing water-power developments had been intrusted respectively to the Departments of War, Interior, and Agriculture, depending upon the location of the water-power site.

² 3 Ann. Rep. F.P.C. 3 (1923).

³ *Federal Water Power Act*, 41 Stat. 1063, Sec. 2.

⁴ 9 Ann. Rep. F.P.C. 13 (1929).

⁵ 1 Ann. Rep. F.P.C. 15-16 (1921).

year terms.⁶ Furthermore, provision was made for the appointment of its own staff by the Commission, although the assignment of engineers from the army or from the Department of Interior or Agriculture for field work is still permitted. As thus reorganized, it has been possible for the Commission to discharge effectively its responsibilities under the Federal Water Power Act and to assume new and broad duties under other legislation.

The present Commission has many duties under a number of federal statutes. Its first responsibility has been the licensing and supervision of power projects and water-power developments under the Federal Water Power Act of 1920. The Federal Power Act of 1935 conferred jurisdiction over interstate commerce in electric energy and over utility companies engaged in such interstate commerce. The Natural Gas Act of 1938 established federal regulation over the transportation and sale of natural gas in interstate commerce. The Flood Control Act of 1938 instructed the Commission to investigate the possibilities with respect to the generation of power at flood-control dams. The Commission also has various responsibilities with respect to contracts, rate schedules, et cetera, under the Tennessee Valley Authority Act and the Bonneville Act.

3. WATER-POWER DEVELOPMENT AND POWER PROJECTS

ANTECEDENTS OF THE FEDERAL WATER POWER ACT OF 1920. Prior to 1920 the federal laws with respect to hydroelectric developments were unsuited to prevailing conditions, and gave little encouragement to the development of water-power resources. The first act was passed in 1901, amended in 1906, and superseded by another act in 1910. But under all of these acts the rights granted were so insecure and the liabilities imposed so uncertain that difficulties were experienced in financing developments under federal jurisdiction. There were further practical difficulties in the way of securing federal approval, since grants for the development of navigable streams required in each instance a special act of the Congress.⁷ Though these earlier acts were admitted failures, it required more than ten years of discussion before Congress finally passed the Water Power Act of 1920. During these years, the power interests were anxious to have a bill approved which would permit private companies to develop power sites; other groups advocated the development of the water-power resources by the government itself. The bill as it finally passed was a compromise that involved elements of both plans.

JURISDICTION. The federal government's control over hydroelectric developments rests upon two foundations—the ownership of land having hydroelectric resources, and control over the navigable waters of the United States under the commerce clause of the Constitution.

There can be little question about the government's jurisdiction where it

⁶ 46 Stat. 797, Sec. 1.

⁷ The acts referred to simply fixed the general conditions under which special grants were to be made. From 1901 to 1906 thirty-eight special acts of Congress were passed but in only fifteen instances were the projects constructed; from 1906 to 1910, five projects were actually constructed although twenty-nine special acts passed Congress; and subsequent to 1910, twenty-three special acts were passed, but only five projects were constructed.

has the outright ownership of the lands upon which hydroelectric developments are erected. Under the Act, such developments must not be inconsistent with the purposes for which the public lands are held.

The federal government's paramount right to maintain navigable waters free and unobstructed has long been established.⁸ Whether rivers are navigable and whether hydroelectric developments on the non-navigable tributaries of navigable waters will affect the navigable capacity of those waters are questions of fact on the interpretation of which rests the jurisdiction of the federal government and the Federal Power Commission over proposed hydroelectric developments.

The legal concept of navigability, the test applied to determine whether federal jurisdiction exists, involve many diverse elements which are not lacking in ambiguities. Navigation assumes many forms, from oceangoing vessels to the floating of logs in spring freshets.⁹ Navigability must be considered in the light of reasonable improvements; if the river can be made available for navigation it is presumably within federal jurisdiction.¹⁰ And when a river has once been found to be navigable, it remains navigable for purposes of federal control.¹¹ The use of a waterway for commerce need not be continuous, and even the absence of any use for a number of years does not cause the river to cease to be a "navigable waterway"; and still less is a lack of commercial traffic conclusive in establishing that the river is non-navigable.¹²

In conferring jurisdiction upon the Federal Power Commission, the Water Power Act defined navigable waters in extremely broad terms to comprehend the full scope of federal authority:

"... 'Navigable waters' means those parts of streams or other bodies of water over which Congress has jurisdiction under its authority to regulate commerce with foreign nations and among the several States, and which either in their natural or improved condition, notwithstanding interruptions between the navigable parts of such streams or waters by falls, shallows, or rapids compelling land carriage, are used or suitable for use for the transportation of persons or property in interstate or foreign commerce, including therein all such interrupting falls, shallows, or rapids, together with such other parts of streams as shall have been authorized by Congress for improvement by the United States or shall have been recommended to Congress for such improvement after investigation under its authority."¹³

LICENSES. The license provisions are the heart of the Federal Water Power

⁸ *Gibbons v. Ogden*, 22 U.S. (9 Wheat.) 1, 189 (1824); *Willson v. The Black Bird Creek Marsh Co.*, 27 U.S. (2 Pet.) 245, 250 (1829); *United States v. Coombs*, 37 U.S. (12 Pet.) 72, 78 (1839); *Gilman v. Philadelphia*, 70 U.S. (3 Wall.) 713, 724-725 (1866); *United States v. Rio Grande Dam & Irrigation Co.*, 174 U.S. 690, 703 (1899); *Leory v. United States*, 177 U.S. 621, 632 (1900); *United States v. River Rouge Co.*, 269 U.S. 411, 419 (1926).

⁹ *The Montello*, 87 U.S. (20 Wall.) 430, 431 (1874); *United States v. Utah*, 283 U.S. 64, 83 (1931).

¹⁰ *United States v. Appalachian Electric Power Co.*, 311 U.S. 377, 407 (1940).

¹¹ *Economy Light Co. v. U.S.*, 256 U.S. 113 (1921).

¹² *United States v. Appalachian Electric Power Co.*, 311 U.S. 377, 407-410 (1940). See also *The Montello*, 87 U.S. (20 Wall.) 430, 442-443 (1874); *Economy Light Co. v. U.S.*, 256 U.S. 113, 122 (1921); *U.S. v. Utah*, 283 U.S. 64, 86 (1931); *Arizona v. California*, 283 U.S. 423, 454 (1931); *Ashwander v. T.V.A.*, 297 U.S. 288, 329 (1936).

¹³ 41 Stat. 1063, Sec. 3.

Act. Through the issuance of licenses and the stipulation of conditions therein, the Commission is expected to supervise the development of water-power resources under federal jurisdiction and to exercise a measure of control over companies obtaining licenses. The Commission issues three types of licenses—the preliminary permit, the standard license, the minor-part license—and in addition accepts the filing of declarations of intention.

The preliminary permit. The Commission is authorized to issue preliminary permits which allow the applicant to retain priority with respect to a proposed development while doing the preliminary work necessary to file an application for a license.¹⁴ Preliminary permits are nontransferable. They may be granted for a term not exceeding three years, the actual duration being specified by the Commission, presumably with due regard for the time necessary for making examinations and surveys, preparing maps, plans, specifications and estimates, and making financial arrangements.¹⁵

The standard license. Licenses are granted for a term not in excess of fifty years.¹⁶ Where the project may affect the navigable capacity of any navigable waters, the plans must be submitted to and approved by the Chief of Engineers and the Secretary of War before the Commission may issue the license. Where the development involves the use of public lands, the Commission must find that the project will not interfere or be inconsistent with the purpose for which the public lands or reservation exists.¹⁷ In the granting of licenses, the Commission must give preference to the applications of states and municipalities, provided their plans are equally well adapted to conserve and utilize the water-power resources of the region, and as between other applicants, preference must be given to those whose plans are best adapted to “develop, conserve and utilize in the public interest the water resources of the region.”¹⁸ And before the Commission may grant a license, the applicant must submit maps, plans, specifications, and estimates of cost for the project, and must show that there has been compliance with the requirements of any applicable state laws.¹⁹

As of June 30, 1940, there were outstanding 128 major licenses for hydro-electric developments having a total present installation of more than 4,000,000 horsepower and designed for an ultimate installation of nearly 7,000,000 horsepower. The total cost of these projects was estimated to be approximately \$740,000,000.²⁰

The Federal Water Power Act specifies in some detail the conditions which the applicant must accept as a part of his license. There must be no substantial alteration in the plans as approved by the Commission without its approval. The licensee must maintain the project works in efficient operating condition, accumulate adequate depreciation reserves, and operate the works in such a way as not to impair navigation.

After the first twenty years of operation, the licensee must establish and maintain amortization reserves, accumulating such proportion of the sur-

¹⁴ Federal Water Power Act, Sec. 4 (c).

¹⁵ *Ibid.*, Sec. 5.

¹⁶ *Ibid.*, Sec. 6.

¹⁷ *Ibid.*, Sec. 4 (d). Wherever the Commission finds that a development should be undertaken by the government itself, the Commission is instructed not to issue a license but to submit its findings and recommendations to Congress. (*Ibid.*, Sec. 7.)

¹⁸ *Ibid.*, Sec. 7.

¹⁹ *Ibid.*, Sec. 9.

²⁰ 20th Ann. Rep. F.P.C. 15 (1940).

plus earnings above the rate of return specified in the license as the Commission shall stipulate, and the amortization reserves must be either held until the termination of the license or applied to the reduction of the net investment. From 1921 until January 1, 1937, the rules and regulations of the Commission provided that the "specified rate of return" upon the actual legitimate investment in any licensed project should be "one and one-half ($1\frac{1}{2}$) times the weighted average annual interest rate payable on the par value of the bona fide interest-bearing debt of the licensee actually outstanding, in whole or in part, on account of the project property at the beginning of the period of amortization and of each calendar year thereafter," unless the interest-bearing debt should be less than 25 per cent of the actual legitimate investment in the project, in which event the specified rate of return should be two (2) times the legal rate of interest in the state in which the project is located.²¹ Since January 1, 1937, the rules and regulations have contained no provision with respect to the "specified rate of return," which has therefore become a matter for Commission decision. The first licenses issued under the Federal Water Power Act reach age twenty in 1941, so that Commission designation of the specified rate of return for the purpose of determining surplus income and the net investment of the licensee for purposes of recapture by the government at the end of the license period may be expected to become a more conspicuous aspect of regulation. A return of 6 per cent has been specified in recent determinations.²²

The licensee must agree to pay to the United States reasonable annual charges to reimburse the government for the costs of administering the Federal Water Power Act, to recompense for the use of government lands and other property, and to expropriate to the government "excessive profits until the respective states shall make provision for preventing excessive profits or for the expropriation thereof to themselves, or until the period of amortization as herein provided is reached."²³ And the licensee may be required to reimburse the operators of other projects to the extent that such other projects benefit the licensee.²⁴

As a condition of the license, every public utility licensee must agree to abide by such reasonable regulations as may be prescribed by the state in which it operates. Where the state has failed to provide regulation, the Federal Power Commission is authorized to regulate the rates, securities, and services of the licensee, until such time as state regulation shall be established.²⁵ Where the

²¹ Regulation 17, Sec. 3, of the *Rules and Regulations of the Federal Power Commission*, 2d issue, adopted by Order No. 9, February 28, 1921, as amended by Order No. 11, June 6, 1921.

²² It should be noted that the determination of the specified rate of return for the purposes of Section 10 (d) of the Federal Water Power Act, relating to the identification of surplus income and the accumulation of amortization reserves, is distinct from the determination of the fair rate of return for rate regulation, in accordance with Section 20 of the Federal Water Power Act and Section 206 of the Federal Power Act.

The regulations issued under orders No. 9 and No. 11 contained a clause to the effect that the fixing of a "specified rate of return" should not be construed as limiting the authority of the Commission or any other public agency in determining the rate of return in any rate-making proceeding.

²³ In fixing such charges, the Commission is instructed to avoid increasing rates to consumers. No charge for a license is made to states or municipalities to the extent that the power is sold to the public without profit or used for state or municipal purposes.

²⁴ *Ibid.*, Sec. 10 (f).

²⁵ *Ibid.*, Sec. 19.

project is constructed in navigable waters, the Commission may impose certain requirements with respect to the improvement of navigation, such as the construction of locks, booms, et cetera, and the licensee must provide free power for the operating of such facilities.²⁶

The license must specifically reserve to the United States the right to take over and operate any project at the expiration of the license period, upon not less than two years' notice. In taking over the project, the government must pay the net investment cost, not to exceed the fair value of the property taken plus reasonable severance damages. The net investment of the licensee and the amount of the severance damages are determinable by the Commission.²⁷ The provision for government acquisition and operation at the expiration of the license does not exclude the right of the federal or state government or of any municipality to take over such projects at any time by condemnation proceedings, upon payment of just compensation. For military or similar purposes, the government may assume temporary possession of any project, paying fair compensation on the basis of the reasonable profits in time of peace, plus the cost of restoring properties to good condition when returned to the licensee.²⁸ At the expiration of the license, assuming the United States does not take over the project, the Commission may issue a new license to the original licensee or to a new licensee, but before the latter may take possession of the property it must make payment equivalent to the net investment cost of the project, not exceeding its fair value, plus reasonable severance damages.²⁹

The constitutionality of the license provisions of the Federal Water Power Act has been challenged on three grounds: that federal jurisdiction over rivers and waters is limited to control for purposes of navigation, that certain license conditions take the licensee's property without due process, and that the asserted right to acquire the project at the expiration of the license and to regulate its financing, accounting, and other aspects are invasions of the rights of the states in violation of the Tenth Amendment. In the *Appalachian Electric Power Company* case³⁰ the majority of the Supreme Court upheld in every respect the license provisions of the Federal Water Power Act. On the critical point that the power of the federal government over hydroelectric developments should be limited to control for navigation, the Court remarked:

"... The point is that navigable waters are subject to national planning and control in the broad regulation of commerce granted the Federal Government. The license conditions to which objection is made have an obvious relation to the exercise of the commerce power. Even if there were no such relationship the plenary power of Congress over navigable waters would em-

²⁶ If the United States decides to construct the navigation facilities, the licensee must convey free of cost such lands and rights of way as are required to complete the navigation facilities. (*Ibid.*, Sec. 11.)

²⁷ *Ibid.*, Sec. 14.

²⁸ *Ibid.*, Sec. 16.

²⁹ *Ibid.*, Sec. 15.

³⁰ *United States v. Appalachian Electric Power Co.*, 311 U.S. 377 (1940). It is significant that forty-one states intervened as *amici* in support of the company's argument against federal jurisdiction. The position of the states was that the federal government's power over navigable waters does not comprehend a power to impose conditions unrelated to navigation; and that to permit the federal government to take over water-power projects at the expiration of the license period would cause a state to lose control of its resources and property and contravene the Tenth Amendment.

power it to deny the privilege of constructing an obstruction in those waters. It may likewise grant the privilege on terms. It is no objection to the terms and to the exertion of that power that 'its exercise is attended by the same incidents which attend the exercise of the police power of the states.' The Congressional authority under the commerce clause is complete unless limited by the Fifth Amendment."³¹ To the criticism that the license condition permitting the acquisition of the property by the government at net-investment cost might result in an unconstitutional taking of property if the price fixed were less than the fair value, in the eminent-domain sense, the Court replied that the license provisions with respect to acquisitions were a part of the price which the licensee must pay to secure the right to maintain its dam under Federal jurisdiction.³² Nor could the Court find either in an option to acquire such hydroelectric projects or in their actual acquisition any invasion of the sovereignty of the state, since the federal government would be acting under its authority to regulate commerce among the states.³³

The minor-part license. Much of the controversy over the administration of the Federal Water Power Act has centered in the provision with respect to the minor-part license. The statute permits the Commission to issue limited licenses for a minor part only of a complete project or for a complete project having not more than one hundred horsepower of installed capacity. In issuing the minor-part license the Commission may, in its discretion, waive such conditions as the statute incorporated in the major license, except that the minor-part license may not have a term of more than fifty years.³⁴ The minor-part license is thus suited to small developments and to such parts of projects as transmission lines. Despite the fact that the minor-part license does not protect the company from a withdrawal of the license at the termination of the license period, whereas the major license would require the payment of the net-investment cost or present fair value if the property should be recaptured by the government, the industry has exhibited a preference for the minor-part license. This preference arises from the distinctive features of the minor-part licenses that have been issued, namely, that such licenses have not included provisions with respect to amortization, recapture, accounting supervision, and the regulation of rates and securities. To escape these regulations, the industry has sought to compel the Commission to issue minor-part licenses, especially for projects on the non-navigable portions of navigable rivers, seeking to restrict the license provisions to those involved in the protection of navigation.³⁵ However, to issue a minor-part license for anything other than small projects or parts of a complete project would involve a surrender of federal control over hydroelectric developments and would clearly be contrary to the Congressional intent in the enactment of the Water Power Act.

The declaration of intention. The Federal Water Power Act seeks to pro-

³¹ *Ibid.*, pp. 426-427.

³² *Ibid.*, pp. 427-428. See also *United States v. Chandler-Dunbar Co.*, 229 U.S. 53, 66, 76 (1913); *Fox River Paper Co. v. Railroad Comm.*, 274 U.S. 651 (1927); *Arizona v. California*, 283 U.S. 423 (1931); *Ashwander v. T.V.A.*, 297 U.S. 288 (1936).

³³ *Ibid.*, p. 428.

³⁴ Sec. 10 (i).

³⁵ This was the basic issue in *United States v. Appalachian Electric Power Co.*, 311 U.S. 377 (1940), discussed above. See also *Hearings Before the Senate Committee on Interstate Commerce*, 71 C., 1 s., Sen. Res. 80, Pt. 2, p. 354, *et seq.*

vide a simple means by which any person planning to construct a dam or other project in a non-navigable stream may discover whether the project will affect the interests of interstate commerce. On the filing of a declaration of intention, the Federal Power Commission will investigate the proposed construction to determine whether the interests of interstate or foreign commerce will be affected, and if the Commission finds that the project will affect interstate commerce the proposed construction may not proceed until a license has been procured. The declaration of intention has been used chiefly with respect to projects planned for the non-navigable portions or tributaries of navigable waters. While the filing of a declaration of intention is not mandatory, a failure to take advantage of this procedure may result in a government suit to enjoin the construction of a project or to cause its removal if erected. If it finds that no public lands or reservations are affected and that the project will not affect interstate commerce, the Commission must grant permission for the construction of the dam, subject, of course, to compliance with any state laws.

A number of hydroelectric developments antedate the passage of the Water Power Act of 1920. As to these projects, the Act provided that the Commission should issue licenses on application and that thereafter the provisions of the Act should apply. Such projects would not, of course, have kept their accounts in accordance with the system subsequently prescribed by the Commission and there would, therefore, be no net-investment cost determinable from its books. To meet this contingency, the Commission was authorized to determine the fair value of such projects (the statute does not stipulate an original-cost basis, though only that base would be logically consistent with the standards of the Act), the fair value so determined to be deemed the net investment of the applicant as of the date of the license, or if no license has been issued, as of the date of the determination.³⁶

NET-INVESTMENT COST AND ACCOUNTING CONTROL. The determination of the net-investment cost of projects is the very foundation of the supervision exercised under the Federal Water Power Act. The Commission is under a specific statutory injunction "to determine the actual legitimate original cost of and the net investment in" licensed projects.³⁷ The Commission has interpreted the statutory instructions strictly to mean that the costs must be "(1) actual, that is, real and bona fide, as distinguished from fictitious or fabricated, whether by intercorporate dealings or otherwise; and (2) legitimate, meaning not coerced, collusive, fraudulent, or unreasonable; and (3) original, as excluding elements of subsequent enhancement, profit, or accretion."³⁸ The statute itself has explicitly stated that "net investment" in a project means the actual legitimate original cost as defined and interpreted in the "classification of investment in road and equipment of steam roads, issue of 1914, Interstate Commerce Commission," plus similar costs of additions and betterments, minus the sum of the following items, to the extent that such items have been accumulated from earnings in excess of a fair return on the investment: (a) unappropriated surplus, (b) aggregate credit balances of current

³⁶ Sec. 23.

³⁷ *Federal Water Power Act*, as amended, 49 Stat. 838, Sec. 64 (b).

³⁸ *Re Louisville Hydro-Electric Co.*, 1 F.P.C. 130, 139 (1933).

depreciation accounts, and (c) aggregate appropriations of surplus or income held in amortization, sinking fund, or similar reserves, or expended for additions or betterments or used for the purposes for which such reserves were created. The term "cost" must not include expenditures from funds obtained through donations by states, municipalities, individuals, or others.³⁹

The procedure for the determination of the actual legitimate original cost and the net investment in licensed projects rests upon two requirements—the system of accounts prescribed for licensees by the Commission and the licensee's statement of the actual legitimate original cost. The licensee is under obligation to file with the Commission the data with respect to original costs and the Commission has free access to the project and to all pertinent books and records.⁴⁰ The Commission makes field inspections while the project is under construction and audits of the reports which the licensee submits. The customary procedure is for the Commission, through its accounting officers, to indicate what cost items claimed by the licensee are disallowed. The licensee is then given an opportunity to establish the propriety of the disallowed items, and the Commission's own determination is made only after full hearings.

The Commission has encountered much opposition to the enforcement of accounting regulations and to its determinations of net-investment cost. Adjudication has finally established that the Commission may enforce the statutory requirement that licensees file data with respect to the cost of the project and that the net investment is to be determined by the Commission immediately, not when the license terminates at the end of fifty years nor when the amortization period begins at the end of twenty years.⁴¹

In all of the determinations of the net-investment costs of projects under federal license, the Federal Power Commission has adhered strictly to original-cost principles. In all except the rare instance, the Commission has eschewed estimates; it has insisted that a finding unsupported by evidence is beyond its power. In all instances, costs must be measured by the actual consideration paid, not by the par value of securities delivered. Where an absence of arm's-length bargaining is found—that is, in all dealings between affiliated interests (whether the affiliated interests are corporations or individuals)—the Commission has insisted that the licensee must prove the actual cost to the affiliated company and that that cost establishes the maximum which may be recognized. The cost is a net cost; allowance is made for all income derived from operations during the construction period and for all sums received from the sale of equipment, unused supplies, and unnecessary property. In the determination of construction costs, consideration is limited to those costs which are essential to the project, and all collateral expenses are excluded. The determination of the actual investment in land has presented knotty problems, since many parcels of land were acquired prior to the establishment of federal supervision. In so far as it is possible without being unfair to the licensee, the Commission insists that claims for land values and construction costs shall be fully supported by records duly itemized. It is particularly noteworthy that

³⁹ *Federal Water Power Act*, Sec. 3.

⁴⁰ *Ibid.*, Sec. 4 (a).

⁴¹ *Clarion River Power Co. v. Smith*, 59 F. (2d) 861, (D.C.C.A., 1932). *Certiorari denied*, 287 U.S. 639 (1932).

rights to develop water power are not included in the original-cost determination at any value in excess of the actual cost to the licensee. Allowances for intangibles have been a smaller proportion of total valuations than is customary in the normal valuation for rate making. For example, interest during construction has been allowed only for the construction period, at 6 per cent simple interest, and the construction period has been held to end when the project is available for use rather than when commercial operation begins.⁴²

As of June 30, 1940, the Commission had made final determination of the net-investment cost for 54 projects, with an approved original cost of \$128,389,719. This represented a reduction of \$10,567,455, or 7.6 per cent, from the claimed costs of \$138,957,174. The Commission had completed the accounting and engineering work on projects having claimed costs aggregating \$522,000,000, or approximately 70 per cent of the total claimed for all projects under major licenses. The status of the projects whose actual legitimate costs remain to be determined were:

	<i>Claimed</i>
Accounts audited, hearings held, opinions and orders issued, and cases partially settled	\$ 28,363,871
Accounts audited, hearings held, opinions and orders to be issued	147,885,304
Accounts audited, reports prepared, cases awaiting hearing or other action	216,953,366
Accounting work in progress	73,280,064
Awaiting assignment for field audit	24,782,249
Awaiting filing of cost statements	8,545,002
Construction work in progress	104,276,063
Uncompleted, inactive, dormant	8,847,100 ⁴³

RECEIPTS FROM LICENSEES. The Federal Power Act provides that licensees shall make payments to the United States for a number of purposes—for the cost of administration of the Federal Water Power Act, for the use and occupancy of government lands, for the use of Indian lands, and for the expropriation of the excess profits from the project. Save for payments due in recompense for the use of Indian lands or government dams, no fees are assessed against states and municipalities developing hydroelectric power on a non-profit basis or by the operators of small projects (those having a capacity of less than 100 horsepower) that are developing power for industrial use.⁴⁴

The Water Power Act provides that the proceeds collected by the Commission shall be allocated to certain designated purposes. All receipts from the use of Indian lands are credited to the Indians of that reservation. All sums re-

⁴² *Alabama Power Co.*, 1 F.P.C., 25, 36 (1932); *Chelan Electric Co.*, 1 F.P.C. 91, 95 (1933); *Re Louisville Hydro-Electric Co.*, 1 F.P.C. 133 (1933); *Portland General Electric Co.*, 1 F.P.C. 161, 185 (1934); *Safe Harbor Water Power Corp.*, 1 F.P.C. 230, 237 (1935); *Clarion River Power Co.*, 1 F.P.C. 269, 286 (1935); *Kanawha Valley Power Co.*, 1 F.P.C. 322, 327 (1936); *Northern States Power Co.*, 1 F.P.C. 329, 345 (1936); *Florida Power Corp.*, 1 F.P.C. 390, 396 (1937); *Lexington Water Power Co.*, 1 F.P.C. 430, 472 (1937).

The determination of pre-license costs has presented difficulties because of deficiencies in evidence. (8 Ann. Rep. F.P.C. 6-7 [1928].)

⁴³ 20 Ann. Rep. F.P.C. 50 (1940).

⁴⁴ *Federal Water Power Act*, Sec. 10 (c).

ceived as reimbursement for the costs of administration are payable to the Treasury. For all other receipts from licensees, the following applications are controlling: 12.5 per cent is paid to the Treasury and credited to miscellaneous receipts; 50 per cent of the receipts from the use of public lands and national forests are payable to the reclamation fund; while 37.5 per cent are payable to the states in which the public lands or national forests are located; and 50 per cent of the receipts from all other licenses are payable to the Treasury for the maintenance of dams and other navigation improvements.⁴⁵

The Federal Power Commission collected \$4,848,950.60 from licensees under the Federal Water Power Act for the fourteen years 1922 to 1935.⁴⁶ And for the five years 1936 through 1940, receipts totaled \$3,558,633.02.⁴⁷

REGULATION OF RATES, SERVICES, AND SECURITIES. As a condition of its license, each licensee which is a public utility is required to accept regulation of rates and services by any duly constituted state authority. The Commission is given jurisdiction to regulate rates and services on transactions in interstate commerce, which would be beyond the jurisdiction of any state body, and to exercise similar control in the event that no state commission exists in a particular state or that the states having jurisdiction are unable to agree with respect to service, rates, or security issues of the licensee.⁴⁸ The statute is explicit in prescribing the method by which the property of a licensee shall be valued for rate-making purposes. It is stipulated that no value shall be claimed or allowed in excess of the value prescribed by the statute for the purpose of establishing the purchase price at which the United States might recapture the project.⁴⁹

The first rate proceeding to arise under the Federal Water Power Act was the *Safe Harbor Water Power Corporation* case, the Commission's opinion being handed down June 11, 1940.⁵⁰ The Commission fixed as the rate base the net-investment cost, less the depreciation reserve, plus an allowance for working capital, and stipulated that the company was entitled to a fair rate of return of 6 per cent on this base. All of the power generated by the corporation was sold under contract to its two parent companies, the Consolidated Gas, Electric Light and Power Company of Baltimore and the Pennsylvania Water and Power Company. The Commission's order required an annual calculation of the fair return and an annual adjustment of the charges.

4. FEDERAL REGULATION OF ELECTRIC AND NATURAL-GAS UTILITIES

THE CHARACTER OF FEDERAL REGULATION. Two gaps have existed in the American scheme of utility control: in a number of states, regulation has

⁴⁵ *Ibid.*, Sec. 17.

⁴⁶ 19 Ann. Rep. F.P.C. 80 (1939).

⁴⁷ The collections were made up of the following charges: administrative fees, 52 per cent; charges for the use of government dams, 38 per cent; fees from the use of public lands and national forests, 6 per cent; and from the use of Indian lands, 4 per cent. The receipts were distributed thus: to the Treasury as its reimbursement for the cost of administration of the Federal Power Act, 52 per cent; to the Treasury for the use of lands and government dams, 20 per cent; to the War Department for the maintenance and operation of dams, 19 per cent; to the Reclamation Fund, 3 per cent; and to the Indian funds, 4 per cent. (20 Ann. Rep. F.P.C. 143 [1940].)

⁴⁸ *Federal Water Power Act*, Sec. 19.

⁴⁹ *Ibid.*, Sec. 20.

⁵⁰ Opinion No. 47 (Docket No. It-5494).

been nonexistent or quite inadequate; and furthermore, the state commissions have been without jurisdiction over the interstate operations of utility companies.⁵¹

The growing importance of interstate movements of electric energy and natural gas has made it imperative that some supervision be exercised over wholesale transactions in interstate commerce. For many local operating companies, the price paid for the wholesale purchase of power or natural gas is the most important element in their operating expenses. These movements are already of large significance, and with growth of the industry and the increase in interconnections, such interstate transactions must become of increasing importance. In 1929, the outward movement of electric energy amounted to 15.18 per cent of the total amount of electric energy generated, and the imports of electric energy amounted to 19.65 per cent of the amount consumed.⁵² By 1933, the electric energy sent from the states amounted to 18.2 per cent of the amount generated and the amount brought in from other states accounted for 18.5 per cent of the energy available for consumption. However, if from these figures there be excluded those states having only an insignificant amount of electric energy moving across their borders, the corresponding figures become 22.8 per cent and 23.2 per cent. (See Table 48.) Average figures conceal the importance of the problem, for many communities are almost completely dependent upon out-of-state sources of supply for their electric energy. In ten states, more than 50 per cent of the energy available for consumption is brought in from without the state.⁵³ And a number of states export a very substantial proportion of the power generated within their borders.⁵⁴

To meet the problems created by the existing gap in regulatory control, the Federal Power Act and the Natural Gas Act were passed giving the Federal Power Commission jurisdiction over the transmission and sale of electric energy and natural gas in interstate commerce.⁵⁵ Each statute is carefully drafted to preserve to the state commissions their existing jurisdiction over utilities and the local distribution of electric energy and natural gas. In addition, the Federal Power Act specifically excludes from its scope the activities of the United States, a state, any political subdivision of a state, and any public agency or instrumentality.⁵⁶

The Federal Power Act and the Natural Gas Act establish a comprehensive system of utility regulation. In this respect, they contrast with the Water Power Act, which established a quite limited supervision over particular utility activities, and the Public Utility Act of 1935, which confers upon the Securities and Exchange Commission quite extensive powers to deal with problems created

⁵¹ Chapter V.

⁵² Federal Trade Commission, *Interstate Movement of Electric Energy*, 71 C., 3 s., Sen. doc., No. 238, p. 5.

⁵³ Delaware, 103; Nevada, 100; Maryland, 96; Mississippi, 88; Arkansas, 75; Tennessee, 67; Virginia, 64; Kentucky, 58; Utah, 54; and Idaho, 52.

⁵⁴ Seven states deliver outside of the state more than half of the power generated within the state: Maryland, 98; Virginia, 74; Vermont, 71; Idaho, 64; New Hampshire, 61; West Virginia, 58; and Tennessee, 58.

⁵⁵ *Federal Power Act*, 49 Stat. 838, Sec. 201 (August 26, 1935). *Natural Gas Act*, 52 Stat. 821, Sec. 1 (June 21, 1938).

⁵⁶ *Federal Power Act*, Sec. 201 (f).

by the holding company. The program of regulation entrusted to the Federal Power Commission contemplates the Commission acting along lines parallel to those which are characteristic of regulation in the more progressive states, dealing with problems beyond the jurisdiction of the individual state and providing a mechanism for co-operation between the federal government and the states in coping with problems common to two or more states.

JOINT BOARDS AND CO-OPERATION WITH STATE COMMISSIONS. The joint board to meet regulatory problems common to two or more states represents a new development in the machinery of control. Whether any matter shall be referred to a joint board rests in the discretion of the Federal Power Commission. If the Commission decides to refer any matter to a joint board, the board is constituted of one or more members, as determined by the Commission, from each of the states having an interest in the problem. Although composed of representatives of the states, these joint boards are federal instrumentalities and are appointed by the Commission from persons nominated by the state commission of each state affected, or by the governor of the state if no state commission exists.⁵⁷ The procedure of the joint board, and the force and effect which shall be given to its actions are determined by the regulations of the Commission. The joint board is "vested with the same power" and "subject to the same duties and liabilities as in the case of a member of the Commission when designated by the Commission to hold hearings." If for any reason the work of the joint board fails to progress satisfactorily, the Commission may revoke its reference of any matter to the board.

The Federal Power Commission is further permitted to confer with any state commission regarding any common regulatory problem. It may hold joint hearings with any state commission in respect to any matter over which it has jurisdiction, and is permitted to avail itself of such co-operation as any state commission may afford. It is required to make available to the several state commissions such information and reports as may be helpful; and upon the request of any state, the Commission may make available "as witnesses any of its trained rate, valuation, or other experts," subject to reimbursement for the expenses thereby imposed upon the Commission.

The Federal Power Commission, following the spirit of the statutes under which it operates, has sought to develop full co-operation between itself and the states. Whenever any proceeding is instituted before the Federal Power Commission, immediate notice is given to the commissions of all states affected thereby, and each state commission is requested, if it deems it in the public interest, to "notify the Federal Power Commission as to the nature of its interest in said matter, and to request a conference, the creation of a board, or a joint hearing, if desired, indicating its preference and the reasons therefor." Similarly, the Commission asks to be notified of any proceedings before state commissions in which there appears to be a federal interest.⁵⁸ Frequent conferences have been held on matters of common interest, and in a number of cases joint hearings have been held by the Federal Power Commission and

⁵⁷ *Federal Power Act*, Sec. 209 (a). The Commission may reject any nominee from any state and invite new nominations. See also *Natural Gas Act*, Sec. 17.

⁵⁸ 16 Ann. Rep. F.P.C. 12-14 (1936).

TABLE 48 *

INTERSTATE MOVEMENT OF ELECTRIC ENERGY: 1933
(Data taken from reports of 215 systems)

Thousands of kilowatt-hours							
Region and State	Generated within State	Energy ¹ available for systems within the State	Received from outside of State	Received		Delivered outside of State	Delivered as per cent of generation
				As per cent of generation	As per cent of energy available		
Northeast:							
Maine	759,000	756,000	39	...	...	...	...
New Hampshire	548,000	185,000	33,848	6.2	18.3	335,641	61.1
Vermont	389,000	136,000	26,036	6.7	19.2	288,757	70.8
Massachusetts	2,274,000	2,708,000	872,238	38.4	32.2	390,679	17.2
Rhode Island ..	442,000	565,000	270,964	61.3	48.0	163,604	37.1
Connecticut ...	1,032,000	1,116,000	136,150	13.2	12.2	49,224	4.8
New York	10,189,000	11,100,000	669,672 ²	6.6	6.0	252,650	2.5
Pennsylvania ..	6,672,000	7,989,000	2,691,161	40.3	33.8	1,388,301	20.8
New Jersey	3,083,000	2,484,000	296,544	9.6	11.1	832,190	27.0
Delaware .....	...	129,000	132,926	...	103.0	4,370	...
Maryland	1,726,000	1,136,000	1,093,077	63.3	96.3	1,687,306	97.7
District of Columbia	420,000	496,000	166,409	39.6	33.6	95,586	22.8
Middle West:							
Michigan	3,041,000	3,107,000	71,674	2.4	2.3	98,002	3.2
Ohio	5,618,000	4,781,000	572,625	10.2	12.0	760,326	13.5
West Virginia ..	1,557,000	1,609,000	527,713	33.9	32.8	901,353	57.8
Indiana	2,404,000	1,775,000	421,729	17.5	23.7	1,040,362	43.2
Wisconsin	1,804,000	1,750,000	166,725	9.2	9.5	254,275	14.0
Illinois	5,955,000	6,096,000	1,086,761	18.2	17.8	975,897	16.4
Minnesota	849,000	1,047,000	241,775	28.5	23.0	92,385	10.9
Iowa	621,000	780,000	223,404	36.0	28.6	83,613	13.5
Missouri	1,126,000	1,927,000	863,798	76.7	44.8	33,290	.03
Southeast:							
Virginia	563,000	648,000	417,143	74.0	64.3	420,259	74.5
North Carolina ..	1,691,000	1,727,000	482,036	28.5	27.9	512,140	30.2
South Carolina ..	1,346,000	1,065,000	49,967	3.7	4.7	342,641	25.5
Kentucky	593,000	522,000	302,200	51.0	57.9	169,518	28.6
Tennessee	640,000	853,000	577,700	90.2	67.7	373,252	58.3
Mississippi	23,000	237,000	210,546	915.4	88.8	218	1.0
Alabama	1,413,000	1,284,000	137,463	9.7	10.7	551,780	38.9
Georgia	1,130,000	1,332,000	412,949	36.6	30.9	215,269	19.0
Florida	551,000	561,000	21,924	4.0	3.9	17,134	3.1
Mountain and Plain:							
North Dakota ..	102,000	75,000	2,491	2.4	3.3	28,993 ³	28.4
South Dakota ..	44,000	68,000	26,393	59.9	39.0	3,609	8.1
Nebraska	428,000	386,000	1,477	.4	.4	46,231	10.8

TABLE 48 (Continued)
 INTERSTATE MOVEMENT OF ELECTRIC ENERGY: 1933
 (Data taken from reports of 215 systems)

Thousands of kilowatt-hours							
Region and State	Generated within State	Energy ¹ available for systems within the State	Received from outside of State	Received		Delivered outside of State	Delivered as per cent of generation
				As per cent of generation	As per cent of energy available		
Mountain and Plain:							
Kansas	739,000	641,000	34,711	4.7	5.2	133,888	18.1
Montana	902,000	880,000	31	...	...	20,100	2.2
Wyoming .....	.....	.....	1,492	...	...	.....	...
Colorado	340,000	321,000	465	.1	.1	.....	...
Southwest:							
Arkansas	128,000	315,000	235,190	183.7	74.6	30,420	23.8
Louisiana	878,000	613,000	35,950	4.1	5.9	377,950	43.0
Oklahoma	635,000	699,000	85,762	13.7	12.4	40,058	6.4
Texas	2,195,000	2,211,000	61,365	2.8	2.7	58,860 ⁴	2.7
New Mexico .....	.....	.....	4,102	...	...	.....	...
Pacific Northwest:							
Washington ..	2,323,000	2,198,000	84,726 ⁵	3.7	3.8	310,230	13.3
Oregon	911,000	866,000	149,800	16.4	17.3	208,954	22.9
Idaho	455,000	382,000	197,835	43.5	51.8	290,557	63.9
Pacific Southwest:							
California	7,923,000	8,421,000	166,889	2.1	2.0	78,348 ⁶	1.0
Nevada .....	.....	59,000	59,267	...	100.0	.....	...
Utah	200,000	438,000	237,506	118.9	54.2	4,653	2.3
Arizona	220,000	228,000	6,811	3.1	3.0	5,908 ⁷	2.7
Total	76,882,000	78,700,000	14,569,466 ⁸	19.0	18.5	13,968,792	18.2
Total, excluding States having interchange to a minor extent only ⁹ ..	59,919,000	61,040,000	14,175,407	23.6	23.2	13,690,440	22.8

¹ As the data included in this tabulation are for the 215 large systems only, and as they involve transactions with smaller systems not included in the tabulation, it is impossible to reconcile figures of Generated, Received, Delivered, and Available for Systems within State.

² 617,905,000 kilowatt-hours included to Canada.

³ 28,000 kilowatt-hours included to Canada.

⁴ 5,056,000 kilowatt-hours included to Mexico.

⁵ 140,000 kilowatt-hours included from Canada.

⁶ 12,270,000 kilowatt-hours included to Mexico.

⁷ 17,000 kilowatt-hours included to Mexico.

⁸ Net balance received over international boundaries 600,674,000 kilowatt-hours.

⁹ States excluded: Maine, Michigan, Florida, Montana, Colorado, Wyoming, Texas, New Mexico, California, Nevada, Arizona.

* Source: Federal Power Commission, *National Power Survey, Interim Report, Power Series No. 1* (1935), p. 46.

interested state commissions. There is no reason to contemplate any encroachment of federal authority in matters of state regulation; regulation from Washington will not displace local supervision by state commissions; but the co-operation of federal and state authorities may be expected to produce more efficient and effective regulation than could be exercised by either the federal or the state government acting alone.

CERTIFICATES AND PERMITS. All natural-gas companies are required to obtain a certificate of public convenience and necessity before they may construct and operate facilities for the transportation or sale of natural gas to markets in which natural gas is already being served by another natural-gas company.⁵⁹ The limitation on the Commission's jurisdiction, to extensions that involve a duplication of facilities in the same market, indicates a Congressional intent to avoid wasteful duplication of capital facilities, with their concomitant increases in costs and the possibility of deterioration of service. Indeed, for the guidance of the Commission, the statute expresses "the intention of Congress that natural gas shall be sold . . . at the lowest possible reasonable rate consistent with the maintenance of adequate service in the public interest." In the first year, the Commission had received six applications for certificates of convenience and necessity involving the construction of more than two thousand miles of natural-gas pipeline.⁶⁰

The Federal Power Commission, in passing upon applications for certificates of convenience and necessity, has sought to protect and further the interests of the natural-gas consuming public in satisfactory service and low rates. Before granting a certificate, the Commission has required the applicant to comply with certain standards: the applicant must have adequate sources of natural gas available; it must have a potential market in the area to be served; it must have adequate financial resources to insure the construction and satisfactory maintenance of the proposed transmission line and other facilities; and the rates proposed must be both reasonable for the consumer and adequate for the company.⁶¹

Applications for the extension of natural-gas pipelines have met with strong opposition, particularly from interests that regard the natural-gas company as a potential competitor. The statute has instructed the Commission to deal only with competition from a like service. Although it has permitted protesting coal, railroad, and labor interests to participate to a limited extent in hearings on applications for certificates, the Commission has not recognized in the objections of these interests any valid basis for refusing the certificate. The award of certificates is frequently accompanied by the imposition of conditions designed to safeguard the interests of consumers, a not uncommon requirement being that the company will extend its facilities or service to adjacent communities if directed by the Commission.

⁵⁹ *Natural Gas Act*, Sec. 7 (c).

⁶⁰ The applications involved the transportation of gas from Louisiana into Arkansas, Kansas into Minnesota, Montana into North Dakota and Minnesota, Kentucky into Indiana, and Illinois into Indiana. (19 Ann. Rep. F.P.C. 21 [1939].)

⁶¹ *Kansas Pipe Line & Gas Co.*, F.P.C., Opinion No. 39 (1939).

The movement of electric power and natural gas across the national boundaries is also subjected to Commission supervision.⁶²

ACCOUNTING SUPERVISION. The Federal Power Commission may require both electric and natural-gas utilities to adhere to a prescribed system of accounts. The Commission may determine the specific accounts in which particular transactions shall be recorded, and the utility must justify any accounting entry which is questioned. The Commission has access to all accounts and records, not only of electric and gas utilities subject to its jurisdiction, but also of any person who controls any company subject to its supervision. The statute provides specifically for control of depreciation accounting, permitting the Commission to fix the depreciation rates for the several classes of property. Since the statute does not relieve any public utility of complying with any state order with respect to its accounting system, it is imperative that there should be a maximum of co-operation between the Federal Power Commission and the state commissions in working out and adopting accounting systems that are mutually consistent, if not identical.⁶³

The Commission has now prescribed two uniform systems of accounts: a uniform system for electric utilities and licensees became effective on January 1, 1937, and the uniform system for natural-gas companies, on January 1, 1940. The accounting systems were evolved in collaboration with the National Association of Railroad and Utility Commissioners and have sought to meet the requirements of both federal and state regulation. Since many states have adopted the new classification, there has been a desirable increase in uniformity of accounting. A significant aspect of the new accounting systems is the requirement that plant and property accounts be adjusted to show their original cost.⁶⁴ After the adjustment of the accounts to the cost basis, the book figures in excess of the original cost must appear in adjustment accounts, which will either be reduced as retirements of property are made or amortized as authorized by the Commission.

The change in accounting systems applies to a very large part of the entire electric industry and to a substantial proportion of the natural-gas industry. The task of verifying the original-cost statements will presumably involve some years of work, particularly since field studies will be required if the accuracy of the accounts is to be established beyond question. It is the policy of the Commission to conduct the field examinations in co-operation with representatives of the state commissions, and this co-operative endeavor will go far to bring uniformity in accounting supervision. It may be expected that the change in accounting requirements will have a profound influence upon rate regulation.

REGULATION OF RATES. The Federal Power Commission has been given supervision over the rates and charges of electric and natural-gas companies subject to its jurisdiction, the Commission's powers being in most respects

⁶² *Federal Power Act*, Sec. 202 (c); *Natural Gas Act*, Sec. 3.

⁶³ *Federal Power Act*, Secs. 301 and 302; *Natural Gas Act*, Secs. 8 and 9.

⁶⁴ The *Natural Gas Act* also authorized the Commission to investigate and ascertain the actual legitimate cost of the property of natural-gas companies. (Sec. 6.)

comparable to those exercised by the commissions of the more progressive states. The utilities are under obligation to exact only just and reasonable charges for the transmission and sale of electric energy and natural gas in interstate commerce, and both preferences and discriminations in either rates or service between different localities or classes of service are forbidden.⁶⁵

No change in rates may become effective except after thirty days' notice to the Commission; and pending an investigation of its reasonableness, the Commission may suspend the operation of any new schedule of rates for a period of five months beyond the time when it would otherwise have gone into effect.⁶⁶ The Commission may act either on its own initiative or on complaint—complaints have been received from municipalities, state regulatory bodies, and local distributing companies—to investigate any existing rates, and if such are found to be unjust or unreasonable, to determine "the just and reasonable rate, charge, classification, rule, regulation, practice, or contract, to be thereafter observed."⁶⁷ It is indicative of a new attitude toward rate regulation, an attitude which recognizes that rates are not necessarily reasonable simply because the company's earnings are not excessive, that the Natural Gas Act directs the Commission to order a decrease "where existing rates are unjust, unduly discriminatory, preferential, otherwise unlawful, or *are not the lowest reasonable rate.*"⁶⁸

The Commission's jurisdiction over rates is limited to interstate transactions; it has no authority to remove unjust discrimination or to correct unreasonableness in the rates charged in intrastate commerce.⁶⁹ The Commission functions to supplement the control exercised by the state authorities; its sphere of usefulness lies in the control of those wholesale interstate rates beyond the reach of the states. Thus, the Commission is specifically instructed to investigate and determine the cost of production or transmission of electric energy or natural gas in interstate commerce, even though it is without power to establish a rate governing the sale of such energy, because such sale is in intrastate commerce or is otherwise subject to state regulation.⁷⁰

In its regulation of rates, the Commission has shown a disposition to adhere to the principles developed under the Water Power Act. It has shown a preference for original cost as the rate base, rather than present fair value, and has been disposed to be more precise than the present-value procedure in adjusting the rate of return to a cost basis.⁷¹ Instances when the Commission has joined in interventions before the Supreme Court as *amicus curiae* have indicated that it supports a prudent-investment rate base.⁷² The deduction of

⁶⁵ Federal Power Act, Sec. 205; Natural Gas Act, Sec. 4.

⁶⁶ And if the Commission's investigation is not completed within the six-month period, the proposed rates become effective, although the Commission may require the utility to keep detailed accounts of all sums received by reason of the increase, and upon completion of the investigation the utility may be required to refund, with interest, any portion of the increased rates which are found not to be justified.

⁶⁷ Federal Power Act, Sec. 206.

⁶⁸ Natural Gas Act, Sec. 5 (a). Italics supplied.

⁶⁹ *Jaspan v. Philadelphia Electric Co.*, 1 F.P.C. 561, 565 (1938).

⁷⁰ Federal Power Act, Sec. 206 (b); Natural Gas Act, Sec. 5 (b).

⁷¹ *Albany v. Albany Lighting Co.*, 1 F.P.C. 732 (1938).

⁷² *Railroad Comm. v. Pacific Gas & Electric Co.*, 302 U.S. 388 (1938); *Driscoll v. Edison Co.*, 307 U.S. 104 (1939).

an adequate depreciation reserve from the cost of the property is a fixed part of the Commission's policy of rate control.

Certain procedures developed by the Commission in its regulation of rates are distinctive and significant. Rate reductions are ordered immediately where a preliminary investigation reveals that existing rates are unjustifiably high; the company is advised of the tentative findings which the Commission proposes to adopt in a final order unless the company is able to "show cause" why the findings should not be made final. A similar "show-cause" procedure has been used successfully to effect an immediate removal of discrimination by requiring that consumers of a given class be accorded the lowest rate applicable to any consumer of that class. To simplify the task of passing upon applications for increases in natural-gas rates, the proposal must be accompanied by a cost analysis, including (i) a description of the facilities used, (ii) a statement (or estimate) of the original cost, depreciated and undepreciated, of the facilities, (iii) an estimate of the annual fixed charges, including taxes, depreciation and return on cost, and (iv) an estimate of operating expenses.⁷³

The regulation of the wholesale price of natural gas transported in interstate commerce had long been required to supplement the control which the states exercised over local companies. In the absence of federal control, the states were seriously handicapped both in ascertaining the facts with respect to the costs applicable to wholesale service and in coping with exorbitant charges by transmission companies. The extent of the Commission's activities is indicated by its file of approximately 1,000 contracts pertaining to wholesale interstate electric rates and 3,000 such contracts covering natural-gas sales.⁷⁴ In the first year following the enactment of the Natural Gas Act, the Commission reported that some twenty-eight proceedings involving the rates charged for the transportation and sale of natural gas in interstate commerce for resale had been instituted.⁷⁵ The cases had been initiated on the Commission's own motion, on complaint from state commissions, and at the request of municipalities.⁷⁶ The frequency of the orders directing decreases or forbidding increases in rates suggests that the previous unregulated rates were unnecessarily high and prejudicial to the interests of consumers.

ADEQUACY OF FACILITIES AND SERVICES. The jurisdiction of the Commission extends to inquiries into the adequacy and sufficiency of any interstate service by an electric or natural-gas utility, together with the authority to determine and prescribe the proper, adequate and sufficient service to be furnished.⁷⁷ But the Commission has no authority to compel an enlargement in the capacity of the utility, or to require it to sell electric energy or natural gas when to do so would impair its ability to afford adequate service to its own customers.

⁷³ 20 Ann. Rep. F.P.C. 71 (1940).

⁷⁴ 20 Ann. Rep. F.P.C. 61 (1940). The complexity of these contracts is suggested by their size, some exceeding 200 pages in length. The Commission has sought to simplify the regulatory problem by securing the substitution of *rate schedules* for contracts wherever feasible.

⁷⁵ 19 Ann. Rep. F.P.C. 8 (1939).

⁷⁶ *East Ohio Gas Co.*, 1 F.P.C. 780 (1939); *Mississippi River Fuel Corp.*, F.P.C. Opinion No. 46 (1940); *Illinois Commerce Comm., v. Natural Gas Pipeline Co.*, F.P.C. Opinion No. 49 (1940).

⁷⁷ *Federal Power Act*, Sec. 207; *Natural Gas Act*, Sec. 7 (a).

In the Federal Power Act's provisions with respect to the interconnection and co-ordination of electric facilities, the first halting steps are taken in the direction of a rationalization of the industry. The Commission is instructed to divide the country into regional districts and to prepare plans for the voluntary interconnection and co-ordination of facilities.⁷⁸ Upon application by any state commission or by any person engaged in the transmission and sale of electric energy, the Commission, after adequate notice and full hearing, may order a public utility to establish physical connection with other electric utilities for the sale or exchange of energy.⁷⁹ In periods of emergency, the Commission is given broader authority to require temporary connection of transmission facilities and such generation, delivery, and interchange of power as will meet the emergency.⁸⁰ The requirements of defense industries in 1941 were partially met by the establishment of "power pools," effecting interchanges of power over broad geographic areas. And in the absence of agreement, the Commission may prescribe the just and reasonable compensation or reimbursement for the delivery or interchange of power.

MERGERS AND TRANSFERS OF FACILITIES. The Commission has supervision over all utilities subject to its jurisdiction with respect to all dispositions of property whether by sale, lease, or otherwise. All purchases of facilities or of securities of any other public utility may take place only with the Commission's approval. And all mergers and consolidations likewise require its prior authorization.⁸¹ Provision is made for proper notice to state authorities, and the Commission is permitted to grant its approval only if it finds the transaction consistent with the public interest. The Commission has found in the Public Utility Act of 1935, of which the Federal Power Act is an integral part, the criteria by which consistency with the public interest is judged—"the securing of reasonable wholesale rates in interstate commerce, the prevention of unfair discrimination in wholesale rates and services in interstate commerce; the free flow of electric energy in interstate commerce; the honest and advantageous financing of public utilities; the protection of such public utilities from improper depletion of their assets by holding companies; the appropriate co-ordination of facilities in the interests of consumers and investors; the maintenance of adequate service; and the conservation of public utility assets so as to provide necessary additions and extensions of facilities to meet the expanding needs of the public for electric energy, and thus accomplish the most effective use of the assets of operating companies for the public benefit."⁸²

COMMON OFFICERS AND DIRECTORS. The statute makes it unlawful for any person, unless authorized by the Commission, to hold interlocking positions in corporations with which an electric utility has transactions.⁸³ And the Commission may give its approval only upon a showing by the applicant that neither the public interest nor the private interest will be adversely affected by the interlocking relationships. This provision has been enforced by the Commission in the light of the evils which the Federal Power Act of 1935 sought to eliminate; namely, control by a small group of individuals with a mini-

⁷⁸ *Federal Power Act*, Sec. 202 (a).

⁸⁰ *Ibid.*, Sec. 202 (c) and (d).

⁸² *Northern Pennsylvania Power Co.*, 1 F.P.C. 350, 354 (1936).

⁷⁹ *Ibid.*, Sec. 202 (b).

⁸¹ *Federal Power Act*, Sec. 203 (a).

⁸³ Sec. 305 (b).

num of investment, the evasion by means of common control of competition, with resulting higher costs and poorer service to consumers; the absence of arm's-length dealing between public utilities and other organizations; the employment of dummy directors, and violations of laws, ethics, and good business practices by those holding such interlocking positions to the detriment of the companies, their securities holders or the public interest.⁸⁴

ISSUANCE OF SECURITIES. The Commission supervises the security issues of all electric utilities subject to its jurisdiction. Three exceptions to its jurisdiction exist: persons and companies subject to both the Federal Power Act and the Public Utility Holding Company Act of 1935 are instructed to proceed under the latter act; regulation does not extend to any public utility organized and operating in a state where its securities are regulated by a state commission; and the issuance of short-term notes, those having a maturity of not more than a year, to an amount not in excess of 5 per cent of the par value of other outstanding securities, is exempt from Commission supervision. The Commission is explicitly forbidden to authorize the capitalization of any franchise, contract, or other right in an amount in excess of the sum actually paid therefor, another indication of the Congressional intent to adhere to the cost standard in utility regulation.⁸⁵

5. SURVEYS AND INVESTIGATIONS

The Federal Power Commission has been active in making surveys and investigations, and in publishing statistical and other data.

The Commission has surveyed the power requirements of the country and has strongly urged the installation of additional capacity where prospective shortages were indicated. The power requirements for various industries have been studied. The costs of electric service have been investigated, with particular attention to distribution costs.

Studies of electric rates have been among the most influential publications of the Commission. The National Rate Book, a loose-leaf series, presents by states the residential, commercial, and industrial schedules of all publicly and privately owned utilities serving communities of 1,000 or more population. There are published annually rate series giving the typical bills for electric service in effect on January 1, a separate report being issued for each state; typical bills are presented for residential service in all communities of 250 population or more, for commercial light and power in all communities of 2,500 or over, and for industrial service in all communities of 10,000 or over. Special compilations of typical net monthly bills for electric service in the larger cities are also published. Significant comparisons have been made of publicly and privately owned electric utilities, showing both the rates charged for electric service and the sums paid in taxes or other contributions to municipalities and other governmental units.

The rate studies have been credited with important improvements in regulation and management. More progressive rate policies on the part of the com-

⁸⁴ *Re John Edward Aldred, F.P.C.*, Opinion No. 51 (1940).

⁸⁵ *Federal Power Act*, Secs. 204 and 318.

panies have been stimulated. Voluntary rate reductions have been encouraged. The former extreme spreads between the highest and lowest bills for the same class of service have been narrowed. An element of competitive emulation has been introduced into rate making and into regulation. The publication of the differentials in the prices of service in different communities has focused attention on the conditions and costs responsible for these differences.

The Commission's publications have made available statistics that were not previously obtainable. There is published annually the *Statistics of Electric Utilities in the United States*, containing full data with respect to Class A and Class B electric utility companies (companies receiving annual electric revenues of \$250,000 or more). The statistics cover balance-sheet items, state-ments of income and earned surplus, data with respect to capital stock and bonds, operating statistics relating to revenues, customers and sales, detailed materials with respect to electric operating expenses, detailed figures relating to utility plant accounts, et cetera. Another annual publication is *Electric Power Statistics*. And there has also appeared a *Directory of Electric Utilities in the United States*, presenting information with respect to the location and the control of utilities, their officers and directors, their total assets, operating revenues, number of customers, generating capacity, the communities served, and similar information. The availability of these statistical and other source materials constitutes a significant contribution to a clearer perception of regulatory problems.

A most consequential aspect of the statistical work of the Commission is the development of standard unit-cost figures. On the basis of the *Statistics of Electric Utilities in the United States*, it is possible to construct unit figures (on a customer, capacity, output, or other physical-unit basis) for the capital and operating costs of electric companies. These figures will make possible an identification of the significant elements of costs actually incurred by a utility; furthermore, they will permit a critical appraisal of the reasonableness of these cost elements through comparisons with other utilities. The availability of reliable yardstick costs will not only provide an important supplement to existing regulatory techniques, but also an opportunity to avoid the use of the valuation procedure in many instances. While such cost elements are in process of computation for electric companies,⁸⁶ there has as yet been no similar

⁸⁶ The Commission reports as follows with respect to its studies:

"Among the significant relationships which will be included in this report are:

"(a) Mortgage debt to utility plant accounts;

"(b) Electric depreciation reserve to electric plant for utilities predominantly steam, hydro-electric or purchasing their power supply;

"(c) Electric operating revenues to electric plant accounts;

"(d) Electric operating revenue deduction to revenues;

"(e) Maintenance and depreciation expenses to electric plant accounts.

Cost units which are being developed for the report include:

"(a) Investment per kilowatt of capacity in land, structures, and equipment, separately for steam and internal-combustion plants;

"(b) Investment per kilowatt of capacity in land; structures; dams, reservoirs, waterways; and equipment for hydroelectric plants;

"(c) Investment per structure mile of transmission lines of various types and voltages;

"(d) Unit operating costs for various important expense accounts related to significant conditions." (20 Ann. Rep. F.P.C. 89-90 [1940].)

progress with respect to other utilities. With the prescription of more adequate and uniform accounting and reporting systems, and with the assembling of more complete statistical data, both on an industry-wide basis and on a historical basis, the opportunity will exist for the extension of this promising technique to all classes of regulated enterprises.

CHAPTER XXIII

PUBLIC RELATIONS AND PROPAGANDA

1. THE PROBLEM OF PUBLIC RELATIONS AND PROPAGANDA

Good public relations are of vital importance to the public utility industries. Since these companies are commonly monopolies, consumers and the general public have often been critical of their prices and service almost as a matter of principle. The utilities are also a favorite target for political attacks. In almost all jurisdictions, public utilities are subject to regulation, the character and severity of which depend very largely upon the insistence with which consumers challenge the reasonableness of the utility's rates and upon the severity of the regulatory standards which are adopted by legislatures, municipal councils, and other public agencies.

It is not surprising, therefore, that utilities have taken advantage of every opportunity to present themselves in a favorable light. This campaign reached its peak of intensity in the decade following 1919 when utility companies, especially the electric and gas utilities, conducted the "greatest peacetime propaganda campaign ever conducted by private interests in this country."¹

2. THE INVESTIGATION

The revelation of the utility propaganda efforts came as a by-product of an investigation into the "power trust" forced by certain liberal senators. An earlier investigation by the Federal Trade Commission, directed chiefly at the alleged monopolistic control of electric utilities by the General Electric Company, resulted in a report that in 1924 "neither the General Electric Company nor any other single power interest, or group of allied power interests, substantially monopolized or controlled the generation, transmission and sale of electricity in the United States."² However, the report raised almost as many questions as it answered, particularly with respect to the conduct of holding companies, and on February 28, 1927, Senator Walsh of Montana, following a speech on the capitalization of public utilities, introduced a resolution for

¹ The word "propaganda" is used advisedly. The mere attempt to influence public opinion by special interests to their own advantage is not here designated propaganda; it may be called legitimate publicity. The term "propaganda" as herein used signifies an attempt to influence public opinion by methods which involve the concealment or misrepresentation of essential and material facts, the misleading presentation of facts or opinions, and usually a failure to disclose the special interests of those who speak and write in behalf of the objectives of the propaganda campaign.

In their correspondence and discussion, representatives of the utility interests were frank in recognizing the propaganda character of their publicity efforts. See Federal Trade Commission, *Utility Corporations*, No. 71-A, p. 3.

Hereafter in this chapter all references not otherwise identified are to the various parts, or numbers, of the Federal Trade Commission's reports appearing under the general title, *Utility Corporations*. ("Exs." refers to the accompanying volumes of *Exhibits*.)

² Federal Trade Commission, *Control of Power Companies*, 69 C., 2 s., Sen. doc. No. 213, p. 50.

a Senate investigation. The investigation was to be directed at the growth of the light and power industry, the volume and character of its security issues, and the operations of holding companies. Almost as an afterthought, the resolution called for an investigation of the extent to which the industry was attempting to influence opinion against municipal or public ownership. Strong opposition, both within and without the Senate, immediately developed to the resolution, and on the motion of Senator Moses of New Hampshire the resolution was referred to the Committee on Interstate Commerce, where it was considered buried. In less than two months the Committee reported the resolution with an unanimous recommendation for its adoption; at that point, the opponents of the investigation introduced an amendment to have the investigation conducted by the Federal Trade Commission, apparently on the assumption that the Commission's investigation would be perfunctory and superficial. Neither the hopes of the opponents of the resolution nor the fears of its friends were supported by the outcome.

The following description of the efforts of the utilities to influence public opinion has been taken from the reports of the Federal Trade Commission and from the testimony given before the Commission. It should be recognized that all of the facts have been established from the utilities' own records; they have not been developed from adverse or conflicting testimony, but from the correspondence, testimony, and other documents of the utility corporations, their associations, and their representatives.

3. THE OBJECTIVES OF UTILITY PROPAGANDA

The beginnings of the utility publicity activities are reasonably clear. The organized propaganda efforts date from 1919. If the idea did not originate with Mr. Samuel Insull, at least it appears that he was the first prominent utility official to devote himself extensively and actively to the organization of the public-relations work.³

BETTER PUBLIC RELATIONS. The underlying objective of the campaign was to create a more favorable public opinion with respect to utility companies and their activities. In its inception it may have been concerned primarily with meeting and countering misinformation and biased attacks upon utility companies,⁴ but it soon passed beyond the defense of the industry to a more positive attempt to secure approval for particular aspects of the utilities' activities and to oppose and to undermine those developments in regulation and elsewhere which were not favored by utility companies.⁵

OPPOSITION TO PUBLIC OWNERSHIP. Public ownership of utilities in all its forms was constantly under attack.⁶ The utility organizations not only fought

³ *Exs.*, No. 2, p. 129.

⁴ *Exs.*, No. 1, p. 100.

⁵ Such a change of emphasis is certainly apparent in the remarks of the president of the Colorado Public Service Association to a meeting of a women's committee on Sept. 29, 1925: "Why should we talk on public relations? Because nothing else in American business is so important. The American business has captured the government and no other government in the world has been put to the service of business as ours." (No. 41, pp. 422, 424.)

⁶ Thus the National Electric Light Association in convention in 1927 was told: "If we get a real honest-to-God government ownership sentiment created in this country, if we get on our hands an Ontario development to cope with, we are just a plain bunch of easy marks, because

to prevent the expansion of public ownership, whether by the nation, the state, or the municipality, but they sought also to eliminate existing publicly owned and operated projects. Thus the director of the Missouri committee on Public Utility Information wrote that it was his great ambition to rid Missouri of all municipal plants.⁷ As the president of one operating company expressed it: "There is not a single known instance where Government ownership—National, State, municipal or other—has been beneficial. It is known that the system cannot continue in a democracy. Either the democracy or the system must go. The evidence is complete. We need no more experiments. Let us tell the plain facts. The system is wicked."⁸

DEFENSE OF THE HOLDING COMPANY. The prevalence of public antagonism to the holding company and the necessity of devoting serious efforts to justifying the holding company in the eyes of the public were widely recognized within the industry.⁹ Indeed, an attempt was made to do away with the designation "holding company" and to have such organizations referred to as "investment companies."¹⁰ In the defense of the holding company, extravagant claims were made with respect to its importance to the industry and its contribution to the program of integration, its significance in financing operating companies, and its success in improving management.¹¹

The complete unification of the electric power industry may also be said to have been an objective underlying the publicity campaign. In the course of the Commission's investigations the thought recurs that it was the "intention of the leaders of the electrical industry to eventually erect in the power field a company which will occupy the same position in that field that is now occupied by the American Telephone and Telegraph Company in the telephone field."¹²

A MARKET FOR SECURITIES. An indirect but ever-present objective was to promote a wider market for utility securities. The normal growth and expansion of operating companies required a continuing flow of capital, and the growth of holding-company systems further multiplied the issue of securities. Also, the widespread ownership of utility securities among all classes of the public was recognized as a protective barrier against "harmful" political developments. Much publicity was concerned with stressing the investment character of utility issues. In this effort, publicity not directly associated with the offer of utility securities was considered quite advantageous.¹³

the sentiment of this country will not lend itself to that sort of development if we will just nip it in the bud." (*Exs.*, Nos. 10-16, p. 132.)

⁷ *Exs.*, Nos. 5-6, p. 409.

⁸ *Exs.*, Nos. 7-9, p. 306.

⁹ *Exs.*, No. 1, pp. 308, 315; *Exs.*, No. 3, pp. 766, 1087.

¹⁰ *Exs.*, No. 1, p. 324.

¹¹ *Exs.*, No. 3, p. 853. See also *Exs.*, No. 3, p. 1166.

¹² Nos. 18-19, p. 135.

¹³ In an address before the 1924 National Electric Light Association convention, the following description of publicity associated with customer-ownership drive occurred:

"A great deal of publicity" was used 'aside from advertising. Whenever there was any article anywhere which we thought would help this movement through our publicity department we secured its publication in one of the newspapers throughout our territory,' which 'helped tremendously.'

"We didn't ask them to subscribe for stock, but we were telling our story. That was before all sorts of bodies—Rotary, Lions, Kiwanis, and what not.' 'One thing' which he stated was 'found particularly effective was giving lectures to classes in the schools and colleges.'" (No. 71-A, p. 304.)

A DEFENSE OF EXISTING CAPITALIZATIONS AND RATES. The industry was singularly sensitive to the charge that it had "watered" its stock and that rates were correspondingly increased by extravagance in the issue of securities. The counter-barrage of the utilities concentrated on two points: first, that there had been no watered stock, or, as one speaker expressed it, "there is not enough water in the public utilities in Missouri to wash a baby's face";¹⁴ secondly, that excessive capitalization was without significance with respect to the rates which the utility was permitted to charge, that "As a matter of fact, all the water of the Atlantic would not affect rates under modern utility regulations."¹⁵

Closely allied to the argument that capitalization did not affect rates, were the efforts to show that rates and charges were not excessive by insisting that utility companies, unlike business enterprises, operated without any profit at all. The utilities' "capital wage" was assimilated to the other costs which the utility incurred in producing and rendering the service.¹⁶

USING AND SAVING STATE REGULATION. The effectiveness of State regulation in protecting the consumer and the alleged efficiency of the private management of utility enterprises were asserted and reasserted to persuade the public that all of their interests were adequately protected by private ownership and operation under governmental supervision.¹⁷ Not unnaturally, this aspect of the publicity had the sympathy of the state commissions; and the various utility organizations, in spreading the doctrine of effective state regulation, provided wide circulation for all statements by public officials to this effect.¹⁸

The importance which the utility interests attached to the existence and continuance of state regulatory commissions is shown by the energy which they devoted to defeating attempts to abolish commissions in states where regulation had acquired the reputation of being ineffective. One of the accomplishments which the Missouri Committee on Public Utility Information claimed (in a memorandum for the information of member companies only) during the period 1921 to 1925 was the defeat of a number of bills looking to the abolition of the state regulatory commission;¹⁹ indeed, it was said that state regulation was saved from abolition by only one vote.²⁰ The utilities

¹⁴ *Exs.*, Nos. 5-6, p. 277; see also *Exs.*, No. 2, p. 147.

¹⁵ *Exs.*, No. 2, p. 37.

¹⁶ *Exs.*, No. 3, p. 1118.

An excerpt from the handbook of the Illinois Committee on Public Utility Information is a typical statement of the "no-profit" theory:

"A grocer, butcher, dry-goods storeman, manufacturer, etc., makes a profit. He has an article to sell; he takes the price it costs him; adds to that a charge known as the overhead, a proportionate amount of his rent, light, heat, interest on his investment, clerks, or other labor charge; then he adds to that a certain sum which is his own profit. He does that with each article.

"But in the utility industry it is entirely different. There is no profit charged on a telephone call, a kilowatt-hour of electricity, a cubic foot of gas, or an electric railway ride. Instead of charging a profit on its sales of service the utility makes no profit. That charge, common to every other business, is eliminated." (*Exs.*, No. 2, p. 728.)

¹⁷ Typical of repeated statements of this character is a remark in a speech delivered at the 1928 convention of the National Electric Light Association: "The state regulation has destroyed every argument in favor of municipal ownership. It has demonstrated that there is no service performed by municipally owned utilities that utilities privately owned and managed cannot perform equally well and at lower actual cost to the public." (*Exs.*, Nos. 10-16, p. 153.)

¹⁸ *Exs.*, No. 4, pp. 400, 457. See also *Exs.*, No. 3, pp. 712, 1072; *Exs.*, No. 4, p. 457.

¹⁹ *Exs.*, No. 2, p. 652.

²⁰ *Exs.*, Nos. 5-6, pp. 557-558.

also actively opposed the abolition of state commissions in Tennessee and Kansas.²¹

Despite the importance of state regulation to utilities, the organized power of the industry was mobilized against those measures, state and federal, which were advanced to make regulation more effective. Though federal review of state regulatory orders was admittedly a critical factor interfering with the effective discharge by state commissions of their responsibilities, the industry opposed bills which sought to limit and restrain the review of the state commissions' decisions by the Federal Courts.²² Indeed by their action, the utility organizations revealed that they regarded any effort at effective governmental control an "interference" with their prerogatives.²³ But curiously, on some occasions, concern was expressed at the "breakdown" in regulation.²⁴

PRESERVATION OF AMERICAN INSTITUTIONS. It is difficult for any individual to dissociate his own personal welfare from the welfare of the community at large. It is, therefore, not surprising to find those who spoke for the utilities were apparently sincere in believing that their efforts would redound to the general welfare. It may have been in this spirit that the 1925 National Electric Association Convention was told that the publicity efforts of the industry were directed to the preservation of American institutions:

"There can be no higher service than the preservation of republican institutions. . . . It is just as much the business of the electric light and power industry to preserve these republican institutions as it is for it to give its patrons service and to make profits for its shareholders. . . . The country cannot exist half socialist and half free."²⁵ Or, as the president of one electric power company stated, "An attack upon the principles for which we stand is an attack upon our Government itself."²⁶

POLITICS. In the beginning, the various utility publicists professed to avoid political activities as a matter of policy,²⁷ but a later analysis of the activity of the various publicity organizations revealed that in practice much attention and energy were devoted to political affairs. And even from the beginning there was an awareness of the political implications of the publicity work, one of the goals being so to condition public opinion as to assure the election of only those public officials who would be favorably disposed to the utility industries.²⁸

²¹ *Exs.*, Nos. 5-6, pp. 537, 636, 725.

²² *Exs.*, No. 4, p. 371.

²³ *Exs.*, No. 5-6, p. 875.

²⁴ Thus the director of the Missouri committee wrote to a member of the Wisconsin Railroad Commission: "By insisting upon 'reproduction new,' issuing securities, cashing in, this man (the man who wants immediate returns), aided legally and logically by the courts is breaking down state regulation." (*Exs.*, Nos. 5-6, p. 457.)

²⁵ *Exs.*, No. 1, pp. 113, 411.

²⁶ *Exs.*, No. 1, p. 147.

²⁷ *Exs.*, No. 2, p. 571.

²⁸ The relation of these activities to political policies was clearly expressed by the director of the Illinois Committee:

" . . . I am fairly familiar with legislative practice and procedure and have not many illusions in that quarter. Sometimes the political road has to be traveled. When a destructive bill is pending in a legislature it has to be dealt with in a way to get results. I am not debating that. But to depend, year after year, upon the usual political expedients for stopping hostile legislation is short-sightedness. . . . In the long run, isn't it better and surer to lay a groundwork with the people back home who have the votes, so that proposals of this character are not popular with them, rather than to depend on stopping such proposals as they get up to the legislature or commission?" (*Exs.*, No. 2, p. 597.)

4. UTILITY ORGANIZATIONS ENGAGED IN PUBLICITY WORK

The elaborate and extensive organizations which the utility industries created for their publicity work testified to the earnestness and intensity which characterized the entire program. Five classes of organizations were active in promoting utility propaganda. First, there was the Joint Committee of the National Utility Associations. Secondly, there were the three national associations for the three utility industries—the American Electric Railway Association, the American Gas Association, and the National Electric Light Association. Thirdly, there were the public utility information bureaus, twenty-eight in number, functioning in the thirty-eight most populous states. Fourthly, there were the public-relations departments of the various holding and operating companies. Finally, the utility interests were successful in enlisting the active co-operation of other business organizations to further their efforts.²⁹ The public-relations work also involved maintaining friendly relations with banks, insurance companies, and manufacturers, and in a number of specific instances these contacts proved most valuable in helping to defeat undesirable legislation.

THE JOINT COMMITTEE OF THE NATIONAL UTILITY ASSOCIATIONS. A Joint Committee of the National Utility Associations was organized as a wartime activity, and at the close of the war it fell into an inactive state. On July 18, 1927, three utility executives meeting in New York announced a revival of the Joint Committee for the purpose of acting as the common representative of the three member associations, the American Gas Association, the National Electric Light Association, and the Electric Railway Association. The organization maintained headquarters in Washington and New York, was well financed by contributions from the members of the various utility associations, and acted as their representative in matters coming before Congress.³⁰ The avowed purpose in reconstituting the Committee was to provide a common spokesman and a source of publicity for the utility industries with respect to pending and prospective federal legislation.³¹ In addition, the Committee printed and circulated various pamphlets containing articles, speeches, et cetera, chiefly opposed to the Walsh resolution for the investigation of the utility industries and government development of hydroelectric projects. It also circulated a weekly digest of excerpts from editorials and other comments.

THE THREE NATIONAL UTILITY ASSOCIATIONS—THE NATIONAL ELECTRIC LIGHT ASSOCIATION. The publicity activities of the utilities were organized and directed by the three national associations, the American Electric Railway

²⁹ These related organizations included the American Society of Mechanical Engineers, the American Waterworks Association, the Chamber of Commerce of the United States, the Committee on the Relation of Electricity to Agriculture, the Electrical Manufacturers Council, the International Chamber of Commerce, National Electrical Manufacturers Association, National Fire Protection Association, and the National Industrial Conference Board. (*Exs.*, No. 1, pp. 62-75.)

³⁰ *Exs.*, No. 3, pp. 397, 398.

³¹ *Exs.*, Nos. 10-16, pp. 130-132.

Association, the American Gas Association and the National Electric Light Association. Of these three, the latter was the oldest, the most thoroughly organized, the best financed, and the most active in the propaganda work.³²

Since it dominated the publicity activities, the National Electric Light Association may be the focal point of the discussion. This association was organized in 1885, and during the 1920's it was reported to include in its membership utilities generating more than 90 per cent of the country's total electric energy.³³ It functioned with a headquarters organization located at New York and thirteen geographical divisions covering the United States, with an additional one for Canada. The work of the National Electric Light Association was carried on largely through a series of committees.³⁴

The Public Relations National Section of the National Electric Light Association was one of the principal instruments in the propaganda campaign. This section had its own executive committee, officers, geographic division representatives, and a number of very active subcommittees. The nature of its activities is partially indicated by the titles of its subcommittees: co-operation with educational institutions, customer ownership, information bureau organization, industrial relations, manufacturers' advertising, public speaking, relations with financial institutions, and women's. Many of these committees were themselves organized with geographic division representatives in each of the thirteen regions in which the National Electric Light Association had a divisional organization.³⁵ The Public Relations National Section aided in the organization of state public utility information bureaus and co-operated with existing state bureaus and with utility companies in a variety of ways. The committee undertook the dissemination of information regarding the power industry; articles were reprinted and distributed; mimeographed news letters were sent out; and advertising service was furnished without cost to all electric light and power companies in the country, the companies individually making arrangements with the local newspapers to publish the material; speakers were provided; motion pictures telling the story of the industry were procured and distributed; and a multitude of other

³² As a result of the unfavorable publicity occasioned by the Federal Trade Commission's investigation, the National Electric Light Association was dissolved. On January 12, 1933, the Edison Electric Institute was organized to take its place.

³³ No. 1, p. 7.

³⁴ The Association had a number of general national committees, the most important being—Civic development, educational, insurance, membership, rural electric service, accounting, commercial, customer relations, domestic electric range, electrical advertising, merchandising, home lighting, industrial heating, promotional rates, refrigeration, street and highway lighting, transportation, water heating, wiring, engineering, accident prevention, electrical apparatus, hydraulic power, overhead systems, prime movers, and underground systems. In addition, there were a number of special national committees, including—advertising, prizes, codes and standards, constitution and by-laws, electrification of steam railroads, exhibition committee, finance committee, lamp committee, membership, prize awards, public relations, rate research, water-power development, etc. A multitude of special subcommittees were concerned with detailed technical matters, such as distillation products of coal, higher steam pressures and temperatures, oil and gas engines, etc. (Exs., No. 1, pp. 14-56.)

For this highly organized machinery to co-ordinate the efforts of the industry in the study of special problems, technical and otherwise, much praise is merited, but it may be recognized that this same organization was utilized to mobilize the entire industry in support of measures and activities not concerned with advancing the public interest.

³⁵ Exs. No. 1, pp. 14-56.

enterprises undertaken. The full scope of the work of the Public Relations National Section will be apparent when the various fields of utility publicity are considered.³⁶

The membership of the National Electric Light Association consisted of both utility companies and individuals. As of January 1, 1928, there were 1,593 company members, and 17,331 individual members.³⁷ The revenue of the Association was derived from annual dues: for individuals, \$3 to \$5 per year, and for companies, a percentage of their gross revenue.³⁸ The revenue derived from these sources grew steadily from \$549,705.31 in 1923, to \$1,079,190.33 in 1927-28.³⁹ A large part of the Association's income was turned over to the various geographic divisions.

PUBLIC UTILITIES INFORMATION BUREAUS. Beginning in 1919 there were organized a series of state committees on public utility information, the number reaching 28 in 1929 and covering in their activity the 38 most populous states.⁴⁰ These information bureaus assembled, initiated, and circulated publicity desired by the privately owned utility industry. They were financed by contributions from the holding companies and utilities operating in their territory. In 1927 their annual budgets averaged over \$20,000, the annual aggregate being in excess of \$600,000.⁴¹

The public utility information bureaus functioned under the direction of a full-time director who was especially selected for his qualification in the conduct of publicity work.⁴² These committees functioned under the continuing supervision and with the direct personal assistance of leading utility executives; indeed, utility executives were urged "to realize that this is as important a part of their business as anything they have to do."⁴³ The work of these committees was not only furthered by the active support of the local utilities but was also promoted by the close co-operation of the national utility associations and their committees.

The work of these committees was commensurate with the breadth of their purpose. Their objectives were as broad and inclusive as public opinion itself.⁴⁴ The work of the state public utility information bureaus covered the major types of utilities—electric power, gas, water, telephone, and electric railways. These bureaus served to centralize the publicity work in their districts, urging

³⁶ *Exs.*, No. 1, pp. 19, 34-35, 37, and 58.

³⁷ *Exs.*, No. 1, pp. 78-96.

³⁸ No. 1, pp. 2-4.

³⁹ *Exs.*, No. 1, p. 98.

⁴⁰ No. 3, p. 305; *Exs.*, Nos. 10-16, p. 243; *Exs.*, No. 3, pp. 639-640. These state committees were set up under various titles with nothing to indicate their affiliation with utility companies. "Committee on Public Utility Information," "Public Utility Information Bureau," "Public Service Information Committee," are typical of their designations.

⁴¹ No. 71-A, p. 421.

⁴² It was said that a director "should be a high-class newspaperman of wide experience, preferably with both reportorial and editorial experience, and particularly should be one with first-hand knowledge of political conditions." (*Exs.*, No. 2, p. 571.) That the director should be "one who is acquainted with newspaper work and one who understands how to approach the men, and one who understands that the editor likes to have some money for paid advertising," is an indication of the importance attached to favorable relations with the press. (No. 3, p. 400; No. 7, p. 128.) A facetious description of the director is taken from the Georgia Information Committee: "You may look upon him as the head of the alibi department, the fixer . . . the undertaker's assistant, suave of manner, discreetly clothed, who moves here and there during the inquest to try to put the best possible face on the murder." (No. 3, p. 541; *Exs.*, No. 3, p. 1216.)

⁴³ *Exs.*, No. 1, pp. 104, 138.

⁴⁴ *Exs.*, No. 2, pp. 592, 594.

the companies to place advertising with the papers, mailing news bulletins to newspapers, utility companies, civic and commercial organizations, and prominent individuals (such as public officials, bankers, ministers, teachers, etc.), establishing and maintaining friendly relations with editors, bankers, and other community leaders, placing pamphlets in the schools, watching the activities of state legislatures, commissions, and municipal officials, establishing speakers' bureaus to train public speakers and finding opportunities for them to speak, waging war against public ownership projects, establishing contacts with colleges and universities and educating their faculties, and acting as critics of school curriculums generally. The character of the publicity which they distributed "ran the gamut from perfectly fair and timely, technical and other news items, through news colored to suit, inspired eulogistic articles issued as though of impartial origin, 'ghost' articles written by utility representatives, up to editorial matter, and to veiled and subtle and also sharp, open attacks on municipally owned and operated plants."⁴⁵

The results of these activities cannot be dissociated from the other publicity work which other agencies carried on. However, those who directed the work of these committees were prepared to take credit for the fact that in four or five short years they had "just about changed the entire trend of economic and political thought in the United States."⁴⁶

PUBLIC-RELATIONS WORK OF HOLDING COMPANIES AND OPERATING UTILITIES. The importance of the activity of the officials and employees of operating utilities and holding companies was continuously stressed whenever public relations were under discussion. As early as 1922 it was urged that every member company have at least one person studying and working to improve that company's public relations.⁴⁷ And it was further specified that the executive of each company should give as much of his time as possible to the furthering of this work.⁴⁸ As the publicity work was organized, it was contemplated that the individual companies and their officers would carry out the direct-action part of the propaganda effort; that they would make the contacts; and in accordance with this scheme, it was declared to be "necessary for the executive of every member company to enlist the support of every newspaper within the territory his company serves."⁴⁹ In enlisting the support of affiliated organizations, direct contacts by the officials of the individual companies was of critical importance. The local company officials also undertook to make arrangements and to provide speakers for various local organizations. In some instances, the utility companies prepared, published, and circulated additional

⁴⁵ No. 71-A, p. 43. The intensity of the effort may be appreciated from the following report on the literature distributed:

"When the committee celebrated its second anniversary last April it passed the five million mark in pieces of literature distributed. Those five million pieces of literature, all helpful to the utility industry, were not merely scattered broadcast, but were definitely placed: with newspaper editors themselves and their readers; with customers of public utilities; with businessmen, bankers, lawyers, employers (for their employees), teachers, preachers, librarians, students in colleges and high schools, mayors, members of city councils and village boards, public officials of all kinds, and candidates for public office. Members of the legislature, for example, received informative matter on public utility questions, not after they were elected but before they were even nominated." (*Exs.*, No. 2, p. 124.)

⁴⁶ *Exs.*, No. 1, p. 108. See also *Exs.*, No. 2, pp. 609-610; *Exs.*, Nos. 5-6, p. 350.

⁴⁷ *Exs.*, No. 3, p. 11.

⁴⁸ *Exs.*, No. 2, pp. 578-579.

⁴⁹ *Exs.*, No. 1, p. 367.

publicity material of their own. The following description of specific activities will afford an occasion to judge the importance of the work of the member companies.

RELATIONS WITH NON-UTILITY ORGANIZATIONS. Those directing the publicity efforts of the utility industries went to great lengths to secure friendly co-operation and assistance outside the utility field. These contacts were cultivated by having utility officials and employees take out membership in various organizations, by contributing to their financial support, by enlisting their co-operation in projects which appealed particularly to their own interests, by providing speakers for meetings and inviting them to speak at the meetings of the utility associations.⁵⁰ Organizations enlisted included the chambers of commerce, investment and commercial banks, insurance companies, the public service commissions of the various states, women's clubs, and various service organizations.⁵¹

The utility industries and their state information committees were members of local and state chambers of commerce. Utility officials were prominent as officers of the National Chamber of Commerce and of the state organizations. In return, they were successful in securing the support of state and national chambers in opposition to public ownership activities by both state and national governments.⁵² Realizing that the banker had an important influence on the public opinion of his community, the utilities cultivated their bankers both socially and through a judicious distribution of their deposits.⁵³ Bankers' conventions and investment bankers' conventions were persuaded to pass resolutions favorable to the utility point of view,⁵⁴ and the Investment Bankers Association was even induced to appear before legislative committees on matters of interest to the utility industries.⁵⁵ Bankers' support proved extremely valuable in defeating various proposals for the public development of hydroelectric power in California.⁵⁶ Officials of insurance companies spoke in favor of the utility point of view and circularized their policyholders with envelope fillers carrying the utilities' message.⁵⁷

The record also shows that utility leaders were active in maintaining close contact with commissioners and the personnel of the commissions; these men were invited to appear before utility conventions, and utility officials participated prominently in the conventions of the National Association of Railroad and Utility Commissioners.⁵⁸

5. PROPAGANDA ACTIVITIES

SCOPE OF EFFORTS. The propaganda activities of the utility industries were characterized by great thoroughness of organization and remarkable intensity of effort. Every known medium for the influence of public opinion except "sky-writing" was employed to inculcate the utilities' ideologies among all classes and conditions of people.⁵⁹

⁵⁰ No. 71-A, pp. 223-227.

⁵¹ *Exs.*, Nos. 10-16, p. 51.

⁵² No. 71-A, pp. 228-233.

⁵³ No. 3, pp. 285-286; *Exs.*, No. 2, p. 197; *Exs.*, Nos. 10-16, pp. 976-977.

⁵⁴ *Exs.*, No. 3, pp. 862-863, 919 *et seq.*

⁵⁵ *Exs.*, No. 2, p. 205.

⁵⁶ No. 71-A, p. 236.

⁵⁷ *Exs.*, No. 1, pp. 32, 416-424.

⁵⁸ No. 71-A, pp. 241-242.

⁵⁹ No. 71-A, p. 59.

The organizations for the performance of the propaganda work were elaborate and all-inclusive. Some attention has already been devoted to the special organizations created solely to carry on publicity. The state committees on public utility information were monuments to the importance which the industry attached to the creation of a favorable public opinion. The work was carried on down to the smallest local community through the organized efforts of the individual holding companies and utility operating companies and through the missionary efforts of their employees.

Much emphasis was placed upon utility employees as a most effective force through which to establish favorable public relations.⁶⁰ Five committees of the National Electric Light Association were devoted to the training of employees and to the direction of their efforts: the educational committee, the customer-ownership committee, the industrial-relations committee, the public-speaking committee, and the women's committee. Study courses were prepared and offered,⁶¹ manuals were written and extensively circulated dealing with the financing, rate structure, regulation, and the history and economics of the utility industry,⁶² and numerous meetings for employees were held.⁶³ Intensive training in public speaking was provided for both men and women employees, and every effort was made to spread the gospel through all the contacts which employees had. The effort at training employees devoted particular attention to providing instruction in controversial matters in order that they might be able effectively to meet all criticisms of the industry and its conduct, and to tell persuasively the story of the industry to their friends, acquaintances, and the public generally.⁶⁴

Much the most effective propaganda work was carried on by individuals who were presumably wholly dissociated from the utility industry. The extraordinary success which attended the effort to tell the utility story through those who were strategically placed to influence public opinion can be appreciated only by an examination of the details of the widely varied publicity activities. Although all were a part of a carefully integrated program, it will be convenient to consider the publicity efforts with reference to the following activities: the press, the universities and colleges, the schools, the platform and the radio, subsidized publications, the organization of conferences, alliances with other organizations, customer-ownership campaigns, and political activities.

THE PRESS. It is commonplace that a free and independent press is absolutely essential to the existence of that informed public opinion upon which the protection of the public interest depends. The utilities were quick to realize the importance of the press and made careful plans to use the newspapers on a nation-wide scale to secure favorable publicity for their story and to discredit or discount all unfavorable or critical publicity.

A favorable press. The first step was to secure the favorable opinion of the press itself, both in its editorial and its news departments. Through personal

⁶⁰ *Exs.*, No. 3, p. 1039; *Exs.*, No. 4, pp. 415, 593, 596, and 749. Also No. 71-A, p. 280.

⁶¹ *Exs.*, No. 1, p. 19; No. 4, p. 615; *Exs.*, No. 4, pp. 721, 776; *Exs.*, No. 3, p. 864.

⁶² *Exs.*, No. 1, p. 369; *Exs.*, No. 2, p. 46; *Exs.*, No. 3, pp. 969, 1118; No. 4, p. 250.

⁶³ *Exs.*, No. 3, p. 818; *Exs.*, No. 4, pp. 451, 723-728.

⁶⁴ No. 71-A, p. 282.

contacts, entertainment, large expenditures for advertising, and the direct financing of newspapers, the utility companies and their publicity organs undertook to create the most friendly relations with newspapers throughout the country.

Personal contacts with publishers, editors, and newsmen were cultivated as the first step. In most states, the public utility information bureaus were placed under the direction of former newspapermen. The officers of the local utility companies were urged to establish and maintain close and friendly relations with every newspaper in the territory served.⁶⁵

Much attention was devoted to the entertainment of newspapermen.⁶⁶ As members of the various press associations, the directors of the state public utility bureaus found opportunities to serve both the newspapermen and the utility companies that employed them.⁶⁷ And when it was expedient, the utilities invited journalists to participate in their annual conventions.⁶⁸ The round of activities by which newspapermen were entertained included banquets, dinners, theater parties, baseball games, golf, et cetera. There was apparently little doubt in the utility industry of the worth of such entertainment.⁶⁹

The most effective means of creating goodwill among newspapermen was through large and regular expenditures for advertising. Advertising was undertaken for the deliberate purpose of building a favorable public opinion which should pay dividends in the form of extensive and favorable publicity in news and editorial columns.⁷⁰ The public-relations sections were constantly urging upon the companies the necessity for increasing their advertising appropriations and for placing regular advertisements among the newspapers throughout the territory served. While there is some dispute as to the total expenditures for advertising by utility companies, there is no doubt that the increase in expenditures reached most impressive figures.⁷¹ Some advertising was placed by the utility associations, some was secured from manufacturers of utility equipment, but most of it was placed by an official of a local utility company who took the opportunity to acquaint the local editor with the utility point of view and to suggest that additional advertising would be forthcoming.⁷²

⁶⁵ *Exs.*, No. 2, pp. 601, 756; No. 4, pp. 468-469; *Exs.*, Nos. 5-6, pp. 216, 649.

⁶⁶ No. 4, p. 443; *Exs.*, No. 4, pp. 521, 537; No. 5, p. 41.

⁶⁷ No. 5, p. 43; *Exs.*, No. 5, p. 197.

⁶⁸ *Exs.*, No. 2, p. 625.

⁶⁹ In 1924 the director of the Missouri committee wrote as follows:

"Gee, Mr. —, what the country press is worth to people who are honest and use it honestly is beyond calculation. I have spent as much as three hundred dollars in three years 'entertaining' editors, etc. Some of them do enjoy a little drink. All of them are 'God's fools,' grateful for the smallest and most insignificant service or courtesy. As I was in the business 27 years, I ought to know newspaper people." (*Exs.*, Nos. 5-6, p. 228.)

⁷⁰ "... We are trying to promulgate the idea rapidly among newspapers that public utilities offer a very fertile field for developing regular, prompt-paying customers for the advertising columns of the newspapers. When that idea penetrates the United States, unless human nature has changed, we will have less trouble with the newspapers than we have had in the past." (*Exs.*, Nos. 5-6, p. 948.) See also No. 2, p. 75; *Exs.*, No. 2, p. 10; *Exs.*, No. 3, p. 1071.

⁷¹ By 1924 advertising expenditures were said to amount to \$11,000,000 a year and in 1927 it was reported that the aggregate was over \$25,000,000 a year. (*Exs.*, No. 2, pp. 644, 681; *Exs.*, No. 1, p. 472; No. 4, p. 190; Nos. 18-19, pp. 255-256.)

⁷² *Exs.*, No. 2, pp. 75, 666.

In a few instances, companies went beyond mere attempts to influence newspaper publicity through personal contacts and advertising expenditures and undertook through direct financing and financial control to influence, if not control, the policies of several large newspapers.⁷³

Publicity channels. The utilities made use of three channels to get favorable news into the press: the distribution of "canned" news bulletins, full reporting for public speakers presenting the utility case, and a supply of feature articles prepared by ghost writers and issued under a prominent name having publicity or news value. All favorable publicity was multiplied by the maintenance of a clipping service which gave wide circulation to all favorable material of either a news or an editorial character appearing in any one paper.

News bulletins were prepared and sent out by all of the state public utility information bureaus and by some of the larger operating and holding companies. These news bulletins, weekly, bi-weekly, or monthly, went to all newspapers in the territory and usually to a mailing list that included libraries, public officials, and prominent citizens. The utilities exploited to the full the possibilities of obtaining newspaper publicity through the news reporting of local speeches.⁷⁴

Much favorable publicity which the utilities obtained was secured through having prominent persons sign articles which had been prepared by utility publicity men. These articles were sent to newspapers or periodicals.⁷⁵ The products of such ghost writers not only provided favorable publicity for the industry in the article itself, but editorial and news comment on the article gave further currency to the utility arguments.

A number of so-called news and editorial services that were organized as private ventures independent of the utilities received financial support, although this utility support was undisclosed to the public or to the newspapers to whom these services were supplied.⁷⁶ The financial aid of the utility interests enabled some of these services to expand until they were operating on a nation-wide basis.⁷⁷

⁷³ No. 71-A, pp. 85-91.

⁷⁴ "The speakers' bureau is merely an adjunct to the press bureau, and it is a most valuable adjunct to getting stuff to the papers which will be read by everybody." (*Exs.* Nos. 5-6, p. 955.) See also *Exs.*, No. 1, p. 107, *Exs.*, No. 4, p. 595.

It was not uncommon for the utility bureaus not merely to supply the press with a copy of the speech, but to send it all ready for printing: "... It has been found also that by writing these stories ourselves and sending them to the newspapers all ready for the machine the points which the industry desires to be emphasized receive attention, and not inconsequential matter." (*Exs.*, No. 3, pp. 1052-1057.)

⁷⁵ "The North and South Carolina Bureau believes that its best news possibility is the use of prominent names. By that I mean a signed article, not news, but dealing with some problem of the industry, by some man or woman whose name means something in our States. Sometimes there is no news in an article, but there is news in its authorship. . . ."

"The Carolina Bureau has obtained approximately fifty per cent of its total newspaper space through the linking of a prominent name with a utility argument." (*Exs.*, No. 2, pp. 606-607.)

⁷⁶ Among the news and editorial services that received financial support from the utilities were the following: E. Hofer & Sons, Portland, Oregon; Utilities Publication Company, and Public Service Magazine, Chicago, Illinois; Darnall's Newspaper Service, Florence, Alabama; National Industrial Conservation Board, Chicago, Illinois; Dixie Magazine, Little Rock, Arkansas; and the Foreign Language Newspaper Service, Chicago, Illinois.

⁷⁷ Where the Hofer Service had been reaching the newspapers in only 15 states in the West, utility support enabled the agency to expand its service to cover the entire country, reaching between 14,000 and 15,000 newspapers, most of them country papers. (No. 7, pp. 223-225.)

The success of the newspaper campaign. Whether it be judged by the number of newspapers that adopted the utility point of view, by the quantity of news space that was obtained without cost, or by the quality of the publicity in news item and editorial comment, the press program was a huge success. The large proportion of all newspapers were educated to embrace the utility philosophy and became very receptive to the materials which were sent out by the propaganda organizations and the local companies.⁷⁸

Quantitatively the success went beyond the expectations of those directing the publicity activities.⁷⁹ The Georgia committee reported between two and three thousand exact reproductions from its bulletin in a little more than a year,⁸⁰ while the Florida committee reported that about 60 per cent of the newspapers were making use of the committee's material, giving them an average of 900 inches of publicity a month.⁸¹ From Pennsylvania and New Jersey it was reported that all of the weekly newspapers used some of the material sent out and 50 per cent of them used all of it.⁸²

Occasionally there occurred a suggestion of what the publicity would have cost the industry had it paid regular line rates for advertising; the Iowa committee calculated that it had had \$80,000 worth of space in eighteen months, and the Florida committee estimated that the space which it had received for one year would have cost \$50,000, although it was noted that much of the material was editorial matter which could not have been purchased at any price.⁸³ During the early years most of the state committees maintained scrapbooks which served as the basis for calculating the amount and character of the publicity obtained. These estimates, in terms of thousands of inches, hundreds or even thousands of columns of news, and hundreds of solid pages—were frequently given in confidential reports at meetings of the industry,⁸⁴ but it was soon concluded that such estimates might be embarrassing if the facts should become known, and some of the committees discontinued their scrapbooks.⁸⁵

The qualitative success of the utilities' campaign in the newspapers may be judged not only by the quantity of news which they succeeded in placing with the papers, but also by the fact that such news as was used was news favorable to their point of view. Favorable editorial comment was considered of particular importance, since such comment came to the public from a source which was presumably independent and objective in its appraisal of utility questions. In one state it was noted that the material sent out "helped to shape editorial

⁷⁸ From Missouri, it was reported: "We . . . were successful . . . in increasing the amount of advertising which had been done in the state. This has a splendid effect upon the editors. . . . I may say, that the newspapers are ninety-nine per cent with the privately owned utilities." (*Exs.*, Nos. 5-6, p. 236.)

A few newspapers did not accept the utility dogma even after lucrative advertising had been arranged for them. One editor wrote that "When the utilities 'come clean' by discarding their watered capitalization and padded expense accounts and fictitious valuations—in other words, tell the truth—there is going to be no difficulty in establishing a relationship that will be good and healthy." (*No. 5*, p. 131; *Exs.*, *No. 5*, p. 268. See also *No. 71-A*, pp. 74-75.)

⁷⁹ "The state press uses the committee's news matter in quantity far beyond its most optimistic expectations. Evidence of absorption of utility facts by the editorial mind is widespread." (*Exs.*, *No. 2*, p. 125.)

⁸⁰ *Exs.*, *No. 7*, p. 1077.

⁸³ *Exs.*, *No. 3*, pp. 1051, 1196.

⁸⁵ *Exs.*, *No. 2*, p. 564; *Exs.*, *No. 3*, p. 965.

⁸¹ *Exs.*, *No. 3*, p. 1191.

⁸² *Exs.*, *No. 3*, p. 967.

⁸⁴ *No. 71-A*, pp. 62-70.

opinion," and other states also reported that the material was used not only as news matter but as a basis for editorial comment.⁸⁶ Although the vast majority of all material on utilities used by the newspapers came directly from the utility companies themselves or from their propaganda agencies, there was usually no disclosure to the reading public of the source of the material.⁸⁷ Indeed, it was a deliberate part of the publicity policy to conceal the interested source from which the news and propaganda materials came.

THE UNIVERSITIES AND COLLEGES. Much effort was directed toward the colleges and universities. This work came largely under the direction of the committee on co-operation with educational institutions, composed of both utility men and college professors.⁸⁸ The objectives of the solicitous attention which centered on the colleges and universities were to educate the faculty in order to offset any radicalism which might arise from their dissociation with actual business conditions, to introduce courses in public utilities including work at the graduate level, to encourage research and publication relative to problems confronting the utility industry or supporting their point of view, and to utilize faculty members as spokesmen who could effectively present the utility story to the public.⁸⁹

Educating the faculties. The first step in the utility program was to "sell the utilities to the faculties."⁹⁰ It was thought that this objective would be easily achieved since the educators belonged to a "starveling profession" and would be particularly susceptible to opportunities to enlarge their income.⁹¹ The business of selling the faculties followed the same principles that had been laid down and found successful in enlisting the support of the newspapers. Personal and social contacts were emphasized, retaining fees were paid for work of various kinds, and contributions were made in support of research undertakings.⁹² The utility publicity experts were resourceful and painstaking.

⁸⁶ No. 71-A, pp. 68-70.

In 1926 the Ohio committee reported that approximately 150 editorials had been written directly from materials sent out by the committee. (*Exs.*, No. 3, p. 1101.)

⁸⁷ *Exs.*, No. 3, p. 1196.

⁸⁸ *Exs.*, No. 1, p. 118; *Exs.*, No. 3, p. 555.

⁸⁹ *Exs.*, No. 1, pp. 117-118.

⁹⁰ "I would advise any manager here who lives in a community where there is a college to get the professor of economics, let us say—the engineering professor will be interested anyway—interested in your problems. Have him lecture on your subject to his classes. Once in a while it will pay you to take such men, getting five or six hundred dollars or a thousand dollars a year, and give them a retainer of one or two hundred dollars per year for the privilege of letting you study and consult with them. For how in heaven's name can we do anything in the schools of this country with the young people growing up, if we have not first sold the idea of education to the college professor?" (*Exs.*, Nos. 10-16, p. 72.)

⁹¹ The following remarks were addressed to the 1924 Convention of the National Electric Light Association:

"Here is a professor in a college who gets \$2,500 a year and has to spend \$3,000 to keep from starving to death, who walks up to his classroom in an old pair of shoes, and some idiot of a boy drives up and parks a \$5,000 automobile outside and comes in and gets plucked. Then because that professor teaches that boy that there is something wrong with the social system, we call him a bolshevik and throw him out.

"What I would like to suggest to you intelligent gentlemen is that while you are dealing with the pupils give a thought to the teachers and when their vacation comes pay them a salary to come into your plants and into your factories and learn the public utility business at first hand, and then they will go back and you needn't fuss—they can teach better than you can." (*Exs.*, No. 1, pp. 120-121. See also *Exs.*, No. 3, p. 943.)

⁹² A compilation of the payments by the utilities to educational institutions and educators will be found in No. 71-A, Appendix 12, pp. 426-433.

ing in investigating the antecedents and attitudes of faculty members, both those who were employed by the utility industries and those who remained beyond the orbit of friendly contacts.⁹³

The organization of conferences, both formal and informal, also afforded an opportunity for the cultivation of friendly relations with the members of various university faculties. Some conferences were quite informal, being the natural by-product of such social occasions as luncheons and dinners attended by both utility men and university faculty members.⁹⁴ A number of carefully planned regional conferences were held for the purpose of acquainting faculty members with the aspects of the utility industry that might be suitable material for presentation in college courses, and incidentally, to build up goodwill on the part of college faculties.⁹⁵ Those who attended the conferences received liberal expense allowances. It would appear that these conferences were successful in arousing the interest and enthusiasm of college instructors and that the utility industry was able to follow up the conferences with the attainment of objectives that sometimes included the introduction of utility courses into the college curricula.⁹⁶ The utilities were also helpful in supplying speakers at conferences not organized by themselves, and very often these speakers were college professors sympathetic with the utility point of view.⁹⁷

The electric utilities were naturally active in promoting and participating in general power conferences.⁹⁸ These conferences were so organized and conducted as to further the interests of the privately owned utilities, and precautions were generally taken to assure that only views helpful to the utilities should be presented.⁹⁹

Contributions. Direct contributions by utility companies and utility associations to the funds of various colleges and universities afforded further opportunities to create sympathy and understanding among the institutions for higher learning. These contributions were made for a variety of purposes: in some instances, the cost of utility courses was paid in part; ¹⁰⁰ scholarships and fellowships were provided; ¹⁰¹ and research work and the preparation of materials on the industry were financed.¹⁰² In some instances, these contributions were above criticism; the utilities were seeking to encourage research which was expected to be helpful in enabling them to discharge their public obligations more effectively or they were seeking the establishment of courses which would serve to train engineers and others for positions in utility industries. In other instances, these contributions were seemingly directed at the creation of a favorable public opinion, through using the university as a platform from which ideas favorable to the industry would emanate.

In general, it may be said that the utilities' work with the universities did

⁹³ No. 71-A, pp. 164-173.

⁹⁴ *Exs.*, No. 4, pp. 287-292, 299-304, 317, 329.

⁹⁵ *Exs.*, No. 4, pp. 1, 87, 88, 93, 98, 347, 831, 851, 899, 904, 897-899; *Exs.*, Nos. 7-9, pp. 418, 448; *Exs.*, Nos. 10-16, p. 599.

⁹⁶ No. 71-A, pp. 160-161.

⁹⁷ *Exs.*, No. 4, p. 796; *Exs.*, Nos. 5-6, p. 111.

⁹⁸ No. 7, pp. 194, 195, 197, 202; *Exs.*, Nos. 7-9, p. 163.

⁹⁹ No. 4, pp. 27-28, 45; No. 7, pp. 169-171, 173, 174, 183, 186; *Exs.*, Nos. 7-9, pp. 26, 151.

¹⁰⁰ *Exs.*, No. 3, p. 1226; No. 4, p. 299; *Exs.*, No. 4, p. 264.

¹⁰¹ *Exs.*, No. 2, p. 418; *Exs.*, No. 4, p. 716; *Exs.*, Nos. 5-6, pp. 864, 903.

¹⁰² *Exs.*, No. 1, p. 121; *Exs.*, No. 3, pp. 384, 385, 391-393, 468, 560, 587, 877, 1147; No. 4, pp. 793, 797; Nos. 5-6, pp. 114, 864, 903, 905; *Exs.*, No. 3, p. 560; *Exs.*, Nos. 10-16, p. 218.

create friendly relations which redounded to the advantage of the industry. However, in a number of instances the fact that universities received financial support did not prevent members of their faculty from exercising an independent and critical attitude in discussions of utilities and problems of regulation. Some utility officials were inclined to be a bit dubious as to the value of financial contributions to universities whose faculties sometimes failed to "understand" the problems of the industry.¹⁰³

Instruction in utility subjects. An ambitious program for the introduction of utility courses in colleges and universities was a part of the plan for developing closer relations between the industry and the institutions of higher learning. The mere multiplication of utility courses did not, of course, achieve the industry's objective; equal concern was expressed with respect to the content and "soundness" of these courses.¹⁰⁴ Those working on the problem of relations with the universities recognized that it would be inexpedient and unwise to attempt by direct means to introduce instruction in utility matters. It was considered advisable to approach the matter indirectly and subtly, to induce some third person not identified with the industry to place the program before the university authorities, and to express willingness to co-operate in the establishment of new courses when the college officials expressed any interest.¹⁰⁵ Several utility men took an active part in preparing and supervising the establishment of courses, and in a few instances instructors and lecturers were drawn from among their own officers and employees.¹⁰⁶ In other instances, the industry assumed the expense of training professors and instructors and of meeting the other costs involved in the presentation of utility material.¹⁰⁷

While not all the colleges and universities responded to the advances of the power interests, quite remarkable success was attained throughout the country in the addition of utility materials to the courses offered, particularly in economics and government.¹⁰⁸ Almost all of the leading colleges of the country were willing to permit occasional lectures on utility subjects which presented the industry's point of view.¹⁰⁹ The courses promoted by the utilities covered such subjects as regulation, rate making, the place of the utilities in the industrial field, utility advertising, customer ownership.¹¹⁰ Nor did the utilities overlook the opportunities presented by the correspondence course.¹¹¹

In their position as sponsors, the utilities did not hesitate to criticize both the content of courses and the presentation of materials. Even the use of the word "profit" in the discussion of utility economics was considered an appropriate point upon which to hang a criticism.¹¹² It was also considered to be within the province of the utility men who were concerned with the college activities to keep close observation on all faculty members who were engaged

¹⁰³ *Exs.*, No. 1, pp. 124-125.

¹⁰⁴ *Exs.*, No. 1, p. 122.

¹⁰⁵ No. 71-A, pp. 153, 179. See also *Exs.*, No. 1, pp. 117-118; *Exs.*, Nos. 10-16, p. 11.

"... The plan was put across in the usual way. We laid the groundwork circumspectly and with care, so that the actual suggestion that such courses be started came from the faculties of the institutions themselves. The rest was routine." (*Exs.*, No. 3, p. 952.)

¹⁰⁶ *Exs.*, No. 3, p. 1226; No. 4, p. 264.

¹⁰⁷ *Exs.*, No. 3, p. 1226; *Exs.*, No. 4, pp. 264, 299.

¹⁰⁸ No. 71-A, pp. 177-184.

¹⁰⁹ No. 71-A, pp. 184-185.

¹¹⁰ *Exs.*, No. 4, p. 296.

¹¹¹ *Exs.*, No. 1, p. 491, 560; *Exs.*, No. 3, p. 893; *Exs.*, No. 4, p. 862.

¹¹² *Exs.*, No. 3, p. 953.

in any teaching which bordered on public utilities and their problems, and to criticize those whose opinions they regarded with disfavor.¹¹³

The work of the utilities in the university field produced, in their own estimate, certain significant gains. A report in 1927 notes a changing attitude on the part of university faculties toward utility problems,¹¹⁴ and it was felt that students were receiving instruction that was "sound."¹¹⁵

THE SCHOOLS. The objectives of the school campaign. The utilities waged an intensive campaign in the primary and secondary schools of the country with the aim "to fix the truth about utilities in the young person's mind before incorrect notions become fixed there."¹¹⁶ This was a part of the general scheme to carry utility information to all classes and conditions of the population "from the cradle to the grave."¹¹⁷ This work was considered of singular importance not simply as a means of conditioning the young mind, but also because the campaign in the schools reached a larger number of boys and girls, the majority of whom would never attend college. To instill a sympathy for the industry and an understanding of its problems, so that "should the future find them charged with authority, these prior impressions of the stability and earnestness of our industries would preclude hasty judgment," were objectives that seemed worthy of the most serious thought and effort.¹¹⁸

In embarking upon a campaign to use the public schools as instruments for furthering the purposes of the industry, the leaders recognized that they were going in where angels might hesitate to tread, and in their care "to avoid seeming to force material upon schoolmen," they adopted various devices to get the schools to ask for their material.¹¹⁹ One method of paving the way for acceptance of their materials was the use of pamphlet material of an interesting and innocent character which revealed nothing of the ulterior motive of the utilities and made easier the task of persuading superintendents and principals to use utility material.¹²⁰

¹¹³ *Exs.*, No. 3, p. 950. Thus an eminent advocate of municipal ownership was the inspiration of the following irate letter from the Chairman of the Committee on Co-operation with Educational Institutions to the President of the National Electric Light Association:

"I think that while we have no right to interfere with the findings and publications of any schoolman when they are based on scholarly research, we not only have a right but a duty to insist that no professor using the prestige of his institution, may express opinions not based upon research and that certainly he must keep his hands out of the kind of thing that an advocate is hired for. This, of course, cuts both ways. Above all else I think we have a right to insist that the mere charlatan who, infatuated with his own glibness of expression, goes out on extensive lecture trips, shall be curbed by his institution. The infernal trouble is these very extension lecturers and chaps who purport to do university service are least likely to be thoughtful and competent men. I think no honest university man will claim that as a function of any university, and we can be charged with no interference with academic control. I think I can assure the association that every one of these birds of the — type is as a stench in the nostrils of his own colleagues, at his own institution, and we would absolutely have the utterances of schoolmen to be along lines in which they have some claim to expertness rather than glibness." (*Exs.* No. 2, p. 439.)

¹¹⁴ *Exs.*, No. 1, p. 559.

¹¹⁶ *Exs.*, No. 2, pp. 12, 78; No. 7, p. 127.

¹¹⁸ No. 71-A, p. 140.

¹¹⁵ *Exs.*, No. 4, p. 297.

¹¹⁷ *Exs.*, No. 1, p. 122.

¹¹⁹ *Exs.*, Nos. 5-6, pp. 967-968.

¹²⁰ The true function of some of this material is revealed by a letter from the Director of the Rocky Mountain Committee to the Executive Manager of the National Electric Light Association:

"Please do not look upon our romance stories as something which we regard as our best effort. Frankly, these booklets do not entirely meet our desires. . . . rather they constitute a 'bread pill'

Pamphlet materials in the schools. By preparing pamphlet material upon various phases of the industry, the utilities were able to offer something to make the schools' programs of study more objective and interesting. To create the impression that the industry was performing a public service and to avoid the appearance of pushing utility propaganda, there were sometimes made available pamphlets of a broader interest than those which were concerned solely with the problems of the industry. Thus in New York 74,000 copies of "Know New York State" were placed in the schools, but on every page of the pamphlet there occurred a reference to the electric or gas utilities.¹²¹

These pamphlet materials were prepared by state bureaus on public utility information and by national organizations, and they were made available for distribution to the schools through the local companies and through the state bureaus. They were offered to the superintendents and principals of schools for use in classes in English, rhetoric, history, civics, physics, and current events.¹²² They were distributed among the schools of the country in vast quantities, and the record contains scores of letters received by state committees from school officials testifying to the wide use of the material.¹²³ In 1921 the Illinois committee was able to report that in the preceding two years it had distributed five million pieces of literature all carefully placed to aid the utility industry.¹²⁴ And equally impressive results were attained in other states throughout the 1920's.¹²⁵

The pamphlet materials were carefully graded to appeal to the children of different age levels. Even the kindergartens were not forgotten; the "Ohm Queen," a 32-page book in color, was prepared for them.¹²⁶

The general content of the utility pamphlets was very much the same throughout the country, although in various states these pamphlets appeared under a variety of appealing titles.¹²⁷

being designed for the perusal of educators who are somewhat chary of our intentions in going before students. Necessarily, our initial efforts had to provide something that would demonstrate that we are not trying to peddle a lot of pure propaganda." (*Exs.*, No. 4, p. 308; see also pp. 470, 595.)

¹²¹ No. 4, pp. 216, 203. In another section of the country, a bulletin was supplied to the school giving facts about the state, but with no propaganda about the company; it was thought that the constant coupling of its name with facts about the greatness of the state would cause the children to associate the company itself with the progress of the state. (No. 7, p. 127.)

¹²² *Exs.*, Nos. 5-6, p. 636.

¹²³ *Exs.*, No. 3, pp. 1105-1106; *Exs.*, No. 4, p. 622; *Exs.*, Nos. 5-6, p. 60.

¹²⁴ *Exs.*, No. 2, p. 124

¹²⁵ "... In Connecticut 10,110 of these catechisms were delivered at one time to 76 schools, 1,500 going to one school. At another time 70 per cent of the high schools of the State were supplied. In one year the Illinois Committee printed one million pamphlets of this series for use in 691 schools. Iowa used between 20,000 and 32,000 in 1925; by 1928 this number was increased to 80,000. The Missouri committee furnished bulletins to 75,000 students in 650 high schools. The New England committee distributed 68,629 pamphlets in 289 New England high schools. In the South, the Louisiana-Mississippi committee provided its two states with 32,000 pamphlets in 1927. In Ohio 190,000 'Aladdins in Industry' got into the schools in two years. Pennsylvania and New Jersey together used 120,000 pamphlets in 1 year. Texas distributed 100,000 of all 4 pamphlets in 20 per cent of its schools in 1925 and in 1928, more than 70,000 of the railway pamphlets.

"... the pamphlets were sent to parochial and private schools as well as public schools." (No. 71-A, pp. 204-205 and 409.)

¹²⁶ *Exs.*, No. 1, p. 124, 408.

¹²⁷ The pamphlets appeared under the following titles: "Electricity—How It Is Made and How Distributed," "Manufactured Gas—How Made and Delivered to the Customer," "Electric

What were the ideas with which the utilities wanted to inculcate the school children? The matter was shrewdly devised to serve the utilities' ends.¹²⁸ Throughout, the utility points of view on controversial matters were stated as facts.¹²⁹ The utility industry under private ownership was glorified, and the prosperity of the community was represented as indissoluble from the prosperity of the utility company.¹³⁰ It was repeatedly stated that public utilities were competently regulated and that the interests of consumers and investors were fully protected.¹³¹ From the *Connecticut Public Utilities Catechism* it appeared that watered stock had no effect on utility rates, that public utilities were properly regulated by state commissions so that only reasonable rates were charged, that public utilities were really publicly owned through customer ownership, and that adverse criticism of public utilities in any particular city advertised that city to outsiders as a poor place in which to live and thereby retarded its growth.¹³² Public ownership was mentioned only to be condemned. Thus it was asserted that "in every case in which a community has attempted to operate the public services, it has been found that the costs of the service are higher than when the service is furnished by a private corporation," and that "the higher costs are not reflected in the rates for service, but in the higher tax rates which the citizens of the community must pay in order to keep their utilities in operation."¹³³ Repeated emphasis that electric light and power plants must be large-scale in order to be economical carried the clear implication that municipal plants must therefore be unsuccessful. Although the utilities earn no "profits,"¹³⁴ it appeared that public utilities' securities were nevertheless the best possible investment.¹³⁵

Revision of textbooks. A second major school activity involved the survey, censorship, and revision of textbooks. The first step had been taken in 1923 when the Illinois Committee on Public Utility Information, seeking to inaugurate a utility course at the University of Illinois, found that there was a lack of textbook materials.¹³⁶ In 1924 the director of the Missouri committee undertook to read all the available textbooks on economics, civics, civil government, et cetera, that were approved for use in the public schools of Missouri, and found their treatment of the utility industry so "prejudiced," "erroneous," and "out-of-date" that the matter was presented to the National

Railways—History and Method of Operation," "Telephone—History and Method of Operation." The Rocky Mountain Committee gave its pamphlets the titles—"Romance of the Kilowatt," "Romance of Gas," "Romance of the Trolley," and "Romance of the Telephone"; in New York this series was referred to as the "Servants of Progress" and in Ohio, as "Aladdins of Industry." (No. 71-A, p. 203.)

¹²⁸ No. 4, p. 203.

¹²⁹ No. 4, pp. 202, 561.

¹³⁰ No. 4, p. 561.

¹³¹ No. 4, p. 202; Nos. 18-19, p. 150.

¹³² No. 3, p. 248; *Exs.*, No. 3, p. 795.

¹³³ *Exs.*, No. 3, p. 799.

¹³⁴ *Exs.*, No. 2, p. 108.

¹³⁵ From the *Connecticut Catechism*:

"... Supervised by government, which is you, the operation of utilities is so regulated as to make them safe and desirable investments for insurance companies, banks, estates, small savings, and in fact, everyone. If the credit of your public utilities were to be impaired and their service endangered, your money, which is in the form of bank deposits, insurance policies, or public utility securities, would be endangered, for even though you may not know it, much of it has been invested in utilities' securities because utility securities are one of the safest investments on the market. Banks, insurance companies, etc., take no chances with your money. They invest it where they know it is safe—in utilities' securities. So the destiny of the entire public and its business enterprises is intertwined with the destiny of its utilities." (*Exs.*, No. 3, p. 799.)

¹³⁶ *Exs.*, No. 2, p. 357.

Electric Light Association, and persons in other states undertook to make similar surveys.¹³⁷ Not only was the matter made an issue of vital national importance for the industry,¹³⁸ but the utilities were also successful in securing the active support and co-operation of persons outside the industry. Even the Association of Railroad and Utility Commissioners was persuaded to take up the revision of the textbooks,¹³⁹ and in Pennsylvania and New Jersey state authorities co-operated with the local utility committees.¹⁴⁰

Having entered upon a survey of the textbooks, the publicity experts proceeded with their characteristic thoroughness and vigor. The record is replete with references to the importance which various high officials in industry attached to this phase of the work. In the language of the director of the Missouri committee, "Teachers Come and Go—Textbooks Remain—The Text Taught is More Important than the Teacher."¹⁴¹

Some members of the industry recognized the dubious character of this enterprise and the telephone representatives withdrew from participation in the committee's work.¹⁴² And others suggested the advisability of caution.¹⁴³

The list of books condemned and the passages upon which the utilities rested their condemnation afford a significant insight into the character of the influence which their efforts must have had, if successful, upon teaching in the schools. Ripley's *Railroad Rates and Regulation* was condemned because it mentioned electric railways unfavorably, in connection with such matters as overcapitalization, stock-watering, abuses in rate making, and weaknesses in regulatory practice. And the whole tone of his *Trusts, Pools, and Corporations* was considered objectionable. "The book as a whole is bad," was the judgment of William B. Monroe's *The Government of Cities*. And Charles A. Beard's *American Government and Politics* was considered one of the worst on the entire list.¹⁴⁴ Charles J. Bullock's *Elements of Economics* was objectionable because of the statement "back of the boodle alderman, one always finds the respectable banker or eminent financier."¹⁴⁵ In J. A. James's *Our Government, Local, State, and National*, a statement that public utilities were monopolies and that in consequence the public might suffer from either high rates or imperfect service was judged improper.¹⁴⁶ *Community Life and Civic Problems*, by H. C. Hill, was considered very bad since it contained statements and examples with respect to stock-watering and spoke favorably of municipal

¹³⁷ *Exs.*, No. 1, p. 122; *Exs.*, No. 3, p. 537; *Exs.*, Nos. 5-6, p. 338. Similar surveys were made by committees in California, Idaho, Illinois, Iowa, Michigan, Montana, New Jersey, New York, North and South Carolina, Pennsylvania, Texas, Utah, Washington, and Wisconsin.

¹³⁸ *Exs.*, Nos. 5-6, p. 347.

¹³⁹ *Exs.*, No. 3, p. 537; *Exs.*, Nos. 5-6, p. 347.

¹⁴⁰ No. 3, p. 399; *Exs.*, No. 3, p. 894, 944, 996.

¹⁴¹ *Exs.*, Nos. 5-6, p. 347. As one utility executive wrote:

"It seems to me that there is no more important subject before our interests than this question of textbooks that deal with public utilities . . . It has been talked of for a long time and there have been committees on the subject, but until some action is taken about these books that dish up such trash and absolutely criminal food for the digestion of school children, college students, etc., we can expect a new radical born or created every so often." (*Exs.*, No. 2, p. 441.)

¹⁴² *Exs.*, No. 4, pp. 907-908.

¹⁴³ "I think this is a very good work but great care must be used to avoid going too far, since if the public were to get the idea that textbooks were being used as propaganda for public utility companies the reaction would be worse than the original misinformation." (*Exs.*, Nos. 5-6, p. 349.)

¹⁴⁴ No. 5, p. 471.

¹⁴⁵ No. 5, p. 483.

¹⁴⁶ *Exs.*, No. 2, p. 419.

ownership.¹⁴⁷ W. L. Nida's *City, State, and Nation* was very objectionable because it discussed graft, municipal ownership, corruption in city government and watered stock in connection with public utilities.¹⁴⁸ And *Civil Government*, by P. S. Reinsch, was rated as unfair because it referred to abuses that followed from the monopolistic character of the utility and suggested that franchises should provide for fair rates and good service.¹⁴⁹ *An Introduction to Economics*, by H. C. Adams, was condemned because it seemed to favor public ownership.¹⁵⁰

Such was the character of the survey and such were the standards by which textbooks were judged! On such grounds it was asserted that a large proportion of the textbooks in use were "out of date," "erroneous," "obnoxious," and "poisonous."¹⁵¹ Textbooks that gave only the municipal or public ownership side of the utility story were classed as unfair or bad, yet the utility pamphlets, books, and other materials that were sent into the schools containing only the private ownership side of the utility question were not regarded as "unfair."¹⁵² Certainly the truth or validity of offensive statements was not the touchstone by which texts were judged; any books that were in any way critical of the utility industries were condemned.

Immediately on the conclusion of their survey, the utility publicity organizations acted directly and through the member companies to effect remedial measures. State and local organizations and company officials approached school superintendents and principals to secure the immediate removal of those books which were considered improper, and in this effort they achieved a very considerable measure of success.¹⁵³

The national organizations sought to correct the textbook situation by approaching publishers directly and were successful in persuading the largest publisher of textbooks to submit all manuscripts on public utilities to representatives of the industry for suggestions and changes, although the publishing firm did not bind itself or the author to adopt such suggestions.¹⁵⁴ The success of the industry in working through publishers was something less than complete. For example, a good deal of time was spent on Hill's *Community Life and Civic Problems*, but very few of the suggestions made by the utility representatives were incorporated, although the new edition did omit reference to Samuel Insull's financing of Frank L. Smith's campaign for the United States Senate.¹⁵⁵

Extracurricular activities. Even school debates were considered significant enough to warrant the attention of a good publicity director, and acute distress was expressed when the decision was awarded to a team supporting public

¹⁴⁷ *Exs.*, No. 2, pp. 429, 430; *Exs.*, No. 4, p. 949.

¹⁴⁹ *Exs.*, No. 2, p. 435.

¹⁵¹ *Exs.*, No. 1, p. 123.

¹⁵³ *Exs.*, No. 1, p. 124; Illinois (*Exs.*, No. 2, p. 437); Iowa (No. 4, p. 384); Kentucky (*Exs.*, No. 2, p. 646); New York (*Exs.*, No. 3, pp. 1167-1168, No. 4, p. 206, *Exs.*, No. 4, p. 185, *Exs.*, Nos. 7-9, p. 205); North and South Carolina (*Exs.*, No. 4, p. 115); Pennsylvania (*Exs.*, No. 3, pp. 948, 949); Texas (*Exs.*, No. 4, p. 648).

¹⁵⁵ *Exs.*, No. 4, p. 909.

¹⁵⁴ No. 71-A, p. 201. A letter from the chairman of the National Electric Light Association Committee on Co-operation with Educational Institutions, dated Dec. 27, 1927, reveals a certain discouragement with this particular effort at revision. (*Exs.*, No. 4, pp. 921-922.)

¹⁴⁸ *Exs.*, No. 2, p. 420.

¹⁵⁰ *Exs.*, No. 2, p. 428.

¹⁵² No. 4, pp. 24-25.

ownership.¹⁵⁶ To assure that such debates would have a happy ending, books, publications, and other materials presenting the industry's views were furnished to the debating teams.¹⁵⁷ Elaborate visits to utility plants were organized for teachers and their pupils as a means of promoting goodwill.¹⁵⁸

Another very successful project was the sponsorship of essay contests. In 1924 a national essay contest was held on the subject of "The National Movement for Better Home Lighting," with prizes of a half-million dollars, the grand national prize being a \$15,000 electrically equipped home. Other prizes were scholarships and educational trips.¹⁵⁹ This essay contest was conducted with national advertising in all the leading magazines and in the local newspapers, and a special lighting primer was prepared and distributed for the use of contestants. The large expenditure involved was considered money well spent.¹⁶⁰

SUBSIDIZED PUBLICATIONS. The utility publicity men were quite active in encouraging the preparation and publication of books presenting the utility point of view. They were particularly anxious that such publications should appear under the authorship of men of repute who were not identified by the public with the utility industry. Emphasis upon this activity, at least at the college level, seems to have been a by-product of the attempt of the Illinois Committee on Public Utility Information to inaugurate a utility course at the University of Illinois. On finding that there was a lack of suitable textbook materials, the Committee wrote to all the larger colleges and universities to inquire whether any textbooks on utility subjects were in process of preparation and whether any faculty members were qualified and interested in writing such books.¹⁶¹ As a result of this survey, contacts were established with a number of professors preparing textbooks and it was thought that these contacts created an opportunity to shape these books to the utility viewpoint.¹⁶² A number of utility men functioned as advisors and critics for manuscripts in process of preparation. Several publications received financial support, either through direct or indirect financial grants or through agreements to purchase a large number of copies so as to assure the financial success of the publication.¹⁶³ There is good reason to believe that the utility publicists exaggerated the influence which they were able to exercise with respect to some of the books which appeared with their blessing.¹⁶⁴

¹⁵⁶ Thus a letter from the director of the Missouri committee in January, 1925, to an official of the United Railways of St. Louis:

"Personally, I would like very much to ascertain the means employed to initiate, manage, and judge these debates in the public schools.

"The debates are carried on very quietly, with little or no newspaper publicity, but are usually well attended by parents, etc. I have noticed, too, that the side which advocates municipal ownership always gets the decision of the judges. I do not know if the judges are of the same personnel in each debate." (*Exs.*, Nos. 5-6, p. 327.)

The explanation was forthcoming that the decision had nothing to do with the merits of the question but went to the side that scored the greater number of points.

¹⁵⁷ *Exs.*, No. 2, p. 636; *Exs.*, No. 3, pp. 685-1009; *Exs.*, No. 4, pp. 395, 485; *Exs.*, Nos. 5-6, pp. 328, 636; No. 14, p. 231.

¹⁵⁸ No. 71-A, pp. 215-216.

¹⁵⁹ *Exs.*, No. 2, p. 357.

¹⁶⁰ *Exs.*, No. 4, p. 877.

¹⁶¹ No. 71-A, p. 189.

¹⁶² No. 71-A, pp. 216-221.

¹⁶³ No. 71-A, pp. 162-166.

¹⁶⁴ Certainly, some of the authors were successful in maintaining an independent perspective. In other instances, such bias as the finished product exhibited could be attributed to the fact that the author, by reason of having a utility man as an adviser, was more fully informed and pos-

Some of the most objectionable of the "subsidized" publications were the studies condemning the Ontario Hydro-Electric Development. These studies appeared as independent, objective and authoritative works with no mention that they had been prepared at the behest of the power interests or financed directly or indirectly from utility funds. The Georgia Railway and Power Company is reported to have paid William A. Pennell to make an analysis of the Ontario Hydro-Electric System, and this analysis was circulated throughout Georgia with no indication that it had been sponsored by the utility company.¹⁶⁵ The so-called Murray and Flood report, "Government-Owned and Controlled Compared with Privately Owned and Regulated Electric Utilities in Canada and the United States," was, according to the testimony, financed by the National Electric Light Association.¹⁶⁶ Wider currency was given to the latter report by preparing a brief synopsis which was distributed by the National Electric Light Association and the state committees.¹⁶⁷ It may be noted in passing that there were criticisms of the Murray and Flood report not only by the Canadian authorities but also by representatives of the utility industry in this country.¹⁶⁸ *Niagara in Politics*, by James Mavor, and *Aladdin, U.S.A.*, by Ernest Greenwood, were both reputedly supported by contributions during the preparation of the work and by the purchase and distribution of a large number of copies of each publication.¹⁶⁹ E. A. Stewart's report, *Electricity in Rural Districts Served by the Hydro-Electric Power Commission of the Province of Ontario, Canada*, appeared with the statement that it had been submitted to the Hydro-Electric Power Commission of Ontario and that the latter had stated that the data therein were correct.¹⁷⁰ However, it appears that the corrections suggested were not made, that the figures published in the report were incorrect in many instances, and that statements throughout the report were not in accordance with the facts.¹⁷¹ Yet this report was considered important enough to be placed in the hands of all members of Congress.¹⁷²

Interesting complications developed in connection with the preparation and publication of *Niagara Falls: Its Power Possibilities and Preservation*, by S. S. Wyer, who was reported to have been paid more than \$15,000 by the Duquesne Light Company for the study. The report was issued under the imprimatur of the Smithsonian Institution, where Mr. Wyer held the title of Associate in Mineral Technology.¹⁷³ Following sharp criticism of the report and of its sponsorship, the Smithsonian Institution on March 24, 1925, ordered that no more copies be printed and declined to furnish further copies on the

sessed of a greater array of facts with respect to those aspects of the problem which were of interest to the utilities than with regard to other phases of the problem. In other instances, unfortunately, such a charitable explanation is scarcely tenable.

¹⁶⁵ *Exs.*, Nos. 18-19, pp. 154-156, 199 *et seq.*

¹⁶⁶ No. 1, pp. 23-24; *Exs.*, No. 1, p. 363; *Exs.*, No. 3, p. 637; No. 11, pp. 45-46; Nos. 10-16, pp. 283-286.

¹⁶⁷ No. 2, p. 158; *Exs.*, No. 2, p. 630; No. 5, pp. 382-383; No. 11, pp. 45-46; *Exs.*, Nos. 10-16, pp. 283-286.

¹⁶⁸ *Exs.*, Nos. 5-6, p. 848.

¹⁷⁰ No. 71-A, pp. 353-354; *Exs.*, No. 1, p. 366.

¹⁷² *Exs.*, Nos. 5-6, p. 1074.

¹⁷³ *Exs.*, No. 2, p. 796; No. 14, pp. 197-211; *Exs.*, Nos. 10-16, pp. 737, 882.

¹⁶⁹ No. 71-A, pp. 350-353.

¹⁷¹ No. 43, pp. 379, 380.

ground that they did not consider the report a scientific and nonpartisan presentation of the material.¹⁷⁴

All of the reports on the Ontario development were used in opposing public-power developments in various parts of the country. Appearing without any indication of their interested source, successive reports cited earlier ones as authoritative and they were all given wide currency even after they had been discredited. There can be no doubt that these reports influenced public opinion, and their continuance on library shelves permits them to influence those who are not informed of their biased and inaccurate character.

THE PLATFORM. The utility industry made use of any and every platform to tell its story continuously and with much reiteration to audiences large and small all over the country. At one committee meeting it was urged that information should be secured concerning "every meeting, or every convention of any kind or character, in any of these five states; we do not care whether it is a woman's convention, a banker's convention, a doctor's convention, or what kind, and by some hook or crook arrange for a representative of our association to speak."¹⁷⁵

An intensive training campaign was inaugurated to acquaint all executives and employees with the problems of the industry and to prepare them to speak effectively in its behalf whenever the occasion should offer.¹⁷⁶ The next step was to secure the greatest possible number of opportunities to present the industry's message. This endeavor was tremendously successful. The six years from 1925 to 1930, inclusive, saw 149,701 speeches delivered to audiences totaling 19,057,776.¹⁷⁷

The industry's plan called for speakers' bureaus throughout the nation.¹⁷⁸ Data were collected with respect to every organization before which there was any possibility of securing an opportunity to speak. Members of the industry were represented in practically every organization and were urged to place themselves in positions where their advice would be sought in arranging programs and securing speakers.¹⁷⁹ In a number of instances, it was found desirable to employ outside speakers, and these hired speakers commonly appeared without any disclosure of their utility connections.¹⁸⁰ And occasionally, arrangements for speakers were made through a third party so that the utilities' interest in the matter might not appear.¹⁸¹

The coming of the radio presented the industry with the opportunity of reaching an ever-increasing audience in addition to the visible audience that heard their speakers. Utility companies became purchasers of broadcasting

¹⁷⁴ No. 71-A, pp. 357-358.

¹⁷⁵ *Exs.*, No. 4, p. 739. See also *Exs.*, No. 3, p. 614, and *Exs.*, Nos. 10-16, p. 114.

¹⁷⁶ *Exs.*, No. 4, p. 415.

¹⁷⁷ No. 71-A, p. 286.

¹⁷⁸ *Exs.*, No. 3, p. 1069.

¹⁷⁹ *Exs.*, No. 1, pp. 133-134; *Exs.*, No. 2, p. 181; *Exs.*, No. 3, p. 608.

¹⁸⁰ No. 71-A, pp. 295-298.

¹⁸¹ A letter from the assistant director of the Illinois committee to the director of the Missouri committee stated: ". . . It has been our custom for some time, as you know, to place certain educators before normal schools and other colleges in the state. We have no set rule or form for this work, it being handled differently as circumstances seemed to make it expedient. More recently we have adopted the plan of having a third party organization make the arrangements with the schools. In strict confidence, the Illinois Chamber of Commerce handled it for us during the last summer. We, of course, paid the bill." (*Exs.*, Nos. 5-6, p. 1092.)

time and in some instances even operated their own broadcasting stations.¹⁸² As in other phases of publicity work, the utilities' large financial resources gave them a significant advantage in employing the radio to spread their message.

Despite their widespread and intense efforts to preach their own point of view, the utilities were not devoted to free speech in the abstract. When inquiry was made as to why a critic of the public utilities was permitted to speak over the radio, the reply came back that the broadcasting company permitted the speech to avoid the accusation of being a monopoly and that the speech was "just one of those things which is not apt to occur again in the very near future."¹⁸³ When Carl V. Thompson, prominent advocate of municipal ownership, sought to speak on the Chautauqua platform, the Missouri committee on public utility information was successful in mobilizing newspaper editors and bankers to protest against his appearance.¹⁸⁴

OTHER EFFORTS. The limitations of space forbid a discussion of other phases of the utilities' propaganda campaign: their use of civic organizations and the churches, the attention devoted to boy scouts and their sisters, the cultivation of farm and labor organizations, their success with women's clubs generally and their difficulties with the League of Women Voters, the willingness of bankers and insurance executives to fight utility battles, the utilization of manufacturers' salesmen as smoking-car preachers, and, finally, their criticism of Will Rogers—all bear witness to the thoroughness with which the publicists watched every channel to influence the formation of public opinion respecting the public utilities.

6. CUSTOMER OWNERSHIP

Customer ownership was another utility activity to improve public relations. Customer ownership has been defined as the ownership of shares of stock of the utility by persons served by that particular company or who reside in its territory. Customer ownership as a planned utility program served three purposes. The sale of stock to utilities' customers was not primarily for the purpose of raising capital, although it would appear that for a number of companies customer ownership campaigns raised capital even more economically than other methods.¹⁸⁵ Customer ownership was viewed as a specific remedy to counteract public ownership sentiment; indeed, customer ownership was widely advertised as the best kind of public ownership, as public ownership in its true sense.¹⁸⁶ Finally and most important, customer ownership was exploited as a means of cultivating and maintaining good public relations.¹⁸⁷

Customer-ownership campaigns were organized and conducted with great intensity of effort. Borrowing from the experience of the government in the Liberty Loan campaigns, regular schools were organized to train employees in selling the stock, quotas were assigned to different departments and districts,

¹⁸² No. 71-A, pp. 299-300.

¹⁸³ *Exs.*, Nos. 5-6, pp. 485-486.

¹⁸⁴ *Exs.*, Nos. 5-6, pp. 134-136.

¹⁸⁵ Dewing, *Financial Policy of Corporations* (3d rev. ed.), pp. 1073-1074.

¹⁸⁶ *Exs.*, No. 1, pp. 209, 309; *Exs.*, No. 3, p. 702.

¹⁸⁷ *Exs.*, No. 1, p. 213; *Exs.*, No. 4, p. 743; *Exs.*, Nos. 10-16, p. 267.

and employees were made to realize that they must attain or surpass the quotas assigned.¹⁸⁸ High-pressure sales methods were also utilized on the prospective purchaser, in some instances door-to-door campaigns being employed.

The character of the customer ownership that resulted deserves passing mention. Though the utilities widely advertised customer ownership as involving "ownership" of the utility by the public and though stress was placed on the proprietorship relation which was established, the fact is that most of the companies offered their non-voting, preferred stock in these customer ownership sales. A very considerable proportion of the securities sold in customer-ownership campaigns consisted of holding-company issues rather than the securities of operating companies. Most purchasers did not realize that in buying holding-company securities, even though preferred stocks, they were acquiring stocks which were inferior in their claim on earnings and in their lien on assets to the common stocks of the underlying operating companies.

A wide range of estimates has been made as to the number of stockholders in utility corporations, the total being variously placed at from two million to seven million.¹⁸⁹ The success of the customer-ownership plan during the 1920's may be indicated by the fact that from 1920 through 1931 there were some 2,520,747 sales to customer investors of 25,553,999 shares of stock having a par value of \$2,103,896,210.¹⁹⁰

The use that was made of customer ownership in building better public relations and in spreading the utility dogma clearly indicates that this was the most significant aspect of customer ownership for the companies. It was recognized that the first necessity was to make the investor conscious of his "ownership" in the utility and to stress the identity of interests between the customer and the company.¹⁹¹ The political potentialities of customer ownership were early appreciated and the utilities utilized their investors to oppose what they regarded as harmful political developments.¹⁹² The most extensive use of security holders for political purposes was the attempt of the utility lobby to mobilize opposition to the passage of the Public Utility Holding Company Act of 1935.

The success of customer ownership is hard to estimate. In the 1920's the industry was enthusiastic about the plan and credited it with being "the most powerful single factor in the events leading up to the present well-being of the electric light and power industry."¹⁹³ In a number of specific instances it was believed that customer ownership had carried the day for the utilities,¹⁹⁴ and in the 1925 report of the customer-ownership committee the attainments of the plan were described thus:

"In the days before customer ownership, the utility was constantly on the defensive. It had few friends; it was the football of politics; it had to be either meek and apologetic and ready to turn the other cheek, or cold, aloof, hard, and uncompromising. But today it can get a hearing. It can take its case to

¹⁸⁸ No. 71-A, p. 304.

¹⁸⁹ *Exs.*, No. 2, p. 346; *Exs.*, No. 4, p. 453; *Exs.*, Nos. 5-6, p. 868.

¹⁹⁰ *The Electric World*, Jan. 2, 1932, p. 40.

¹⁹¹ *Exs.*, No. 1, p. 220; *Exs.*, Nos. 10-16, p. 271.

¹⁹² No. 71-A, p. 305; *Exs.*, No. 3, p. 417.

¹⁹⁴ *Exs.*, No. 1, p. 422; *Exs.*, No. 3, pp. 702-703.

¹⁹³ No. 14, p. 311.

its own stockholders. It does not need to apologize. It can take its stand proudly before the world, with an army to support it and, holding its head high, take credit for the constructive things it has done and for its leadership in all forward-looking movements in American industry."¹⁹⁵

In the longer perspective, the optimistic claims and enthusiastic endorsements of customer ownership as a device for building goodwill have changed to forlorn attempts to persuade security holders that their losses are attributable to the interference and competition of the government rather than to the mismanagement and financial manipulations of those who controlled and directed the utility industries. In the long run, customer ownership has probably created more ill-will than goodwill by reason of the heavy and even disastrous losses that have been sustained by many investors. Except in the grosser cases of mismanagement by the holding-company control, most of those who invested in the securities of the underlying operating companies have found their principal safe and their income secure. But a very substantial proportion of all who bought holding-company securities have suffered losses which have made them the severest critics of the entire industry.¹⁹⁶

7. POLITICAL ACTIVITIES

The record of the investigation of utility publicity activities reveals many statements by leaders of the industry that political activities should be eschewed. Yet there is throughout a recognition of the fact that all publicity activity has its political significance. And in contrast to the professed avoidance of political activities is the diversified and intense interest in political affairs of some utility officials and of many who were in charge of the propaganda activities. Whenever there was an issue of importance to the industry, there was active participation in local, state, and national political campaigns. And there should, of course, be no surprise that the utility representatives kept themselves fully posted with respect to all legislation, state and national, that might affect the conduct of the industry.

For convenience in discussion, the political activities may be considered under four headings: the lobbying, the utility attitude on state regulation, the opposition to the extension of federal regulation, and the opposition to public ownership in all its forms.

LOBBYING. Both elective and appointive officials were recognized as key men and were always on mailing lists for utility publicity. Furthermore, close personal contacts were maintained with state officials and with members of the various legislatures, such contacts enabling the utilities to keep informed with respect to developments and to make known their point of view on matters of interest.¹⁹⁷ In lobbying, as in other activities, entertainment¹⁹⁸ and

¹⁹⁵ *Exs.*, No. 1, p. 209.

¹⁹⁶ In some instances, investors in the securities of the operating companies have suffered financially from the collapse of the top-holding company. Some operating companies have felt obliged to issue their own securities in exchange for the worthless stock of their holding companies as a means of avoiding threatened litigation and preserving a modicum of goodwill among their own customers. See *Community Power and Light Co.*, 6 S.E.C. 182 (1939).

¹⁹⁷ *Exs.*, No. 2, p. 636.

¹⁹⁸ From Illinois in 1921 to the National Electric Light Association came the following request:

the expenditure of funds¹⁹⁹ provided the sinews of war. Attention has already been called to the fact that the utilities were successful in rallying other organizations to oppose measures which they considered harmful.²⁰⁰ But along with lobbying activities there was always the recognition that an ounce of prevention was worth a pound of cure.²⁰¹

STATE REGULATION. Since state regulation of public utilities provided the utilities with their most effective defense against all proposals to extend public ownership, utility representatives were naturally active in seeking to forestall the attempts to do away with the regulatory commission in favor of more rigid measures of control. In many instances, their concern went further and we find utility publicity seeking to prepare the people for the decisions of their public service commission and to educate them so that such decisions would be well received.²⁰² Despite their professed support of state regulation, the utilities were active and successful in opposing legislation which would strengthen state regulation, though with the passing years the pressure for such legislation noticeably diminished.²⁰³ It is, perhaps, significant that the utilities sometimes branched out to oppose measures which were of concern to industry generally.²⁰⁴

FEDERAL REGULATION. The record discloses that the power interests were much concerned with the organization and activities of the Federal Power Commission, and there were repeated offers by utility leaders to aid in setting up the administration and preparing regulations under the Federal Water

"The legislature is in session here and it looks like a very stormy session, and I could use very handily a little J. Walker to very good advantage, and it occurred to me that you could do me a very great favor if, the first time you are coming west, you would call up a friend of mine in New York and bring me half dozen." (*Exs.*, No. 2, p. 170.)

¹⁹⁹ In investigating the expenditure of funds in opposing certain legislation in Pennsylvania, the Federal Trade Commission was unable to obtain any identification of the persons to whom sums of money had been paid even though substantial expenditures had occurred approximately a year before the testimony was given. (*Exs.*, No. 3, pp. 856-861; No. 3, pp. 295-303.)

²⁰⁰ "The Investment Bankers Association in matters affecting legislation have been very helpful. Personally, I have the greatest success in using them as speakers before legislative committees regarding legislation." (*Exs.*, No. 2, p. 205. See also *Exs.*, No. 2, p. 623; *Exs.*, No. 4, p. 611.)

²⁰¹ "I do not think our committee could serve the interests of their own individual companies better than by starting now the work of building in their communities a strong public aversion to Government interference, in any way, in the development and operation of the various electric power companies." (*Exs.*, Nos. 5-6, p. 97.)

"... The farmer runs Georgia politically and we regard it as five-sixths of our job to put into his mind economic ideas which we regard as somewhat sounder and more useful than those he gets from the crossroads demagogue and the camp meeting. All our advertising, our publicity, our speaking, and our general efforts are concentrated on this one point." (*Exs.*, No. 3, p. 1243.)

²⁰² *Exs.*, Nos. 5-6, p. 525.

²⁰³ "... In our state, a little over eight years ago, our legislature there had something like 104 anti-utility bills in our general assembly. Two years later there were eighty-odd bills. Two years later there were seventy-odd bills—coming down a little, it is true, but many of them very vicious, almost confiscating in their principles. This last session we had a regular session. They met and adjourned in 60 days and they were grinding all they could. But not a single bill of all that were passed was proposed that would have been inimical or would be hurtful in any way to the public utilities of the state had it passed and received the governor's signature." (*Exs.*, No. 2, p. 624.)

²⁰⁴ "You will be interested to know that this committee is working quietly with the associated industries of Missouri to defeat the workmen's compensation law, which our union labor friends are endeavoring to originate by initiative petition in Missouri." (*Exs.*, Nos. 5-6, p. 326.)

Power Act.²⁰⁵ There was also a more than casual interest in the selection of the Federal Power Commission's staff. The industry was successful for a time in opposing legislation which would have limited a company's right of appeal from the orders of state regulatory commissions to the federal courts, despite the fact that in the abuses of judicial review was found one of the strongest arguments that state regulation was ineffective.²⁰⁶ But the principal efforts were concentrated on preventing the federal government from undertaking the development of hydroelectric power at Muscle Shoals on the Tennessee River and the construction of Boulder Dam on the Colorado River.²⁰⁷

PUBLIC OWNERSHIP. The opposition to public ownership was intense on all fronts. Much propaganda was directed against specific municipal plants which had achieved a reputation for being singularly successful.²⁰⁸ Various state programs for the development of public power, in California, Washington, and Oregon, found the utilities in vigorous opposition, spending large sums of money, and setting up ostensibly independent organizations to carry on the battle.²⁰⁹ The giant power plan in Pennsylvania was defeated largely through the efforts of the utilities.²¹⁰

8. CHARACTER OF UTILITY PROPAGANDA

The character of the utility propaganda has been sufficiently indicated in the discussion of the purposes of the campaign and the nature of the various publicity activities. For present purposes, the nature of the information which the industry desired to place before the public is concisely indicated by an outline prepared in 1927 by Mr. Martin J. Insull, an outline of the points that it was thought absolutely essential for the industry to set forth:

"1. The public, through regulatory bodies, is protected as to security issues, rates, and service.

"2. Earnings on capital invested limited by regulatory bodies. No profit—simply a capital wage.

"3. Public's financial interest is represented directly by ownership of utility securities and indirectly by the banks, insurance companies, and other fiduciary institutions.

"4. Investment and development companies are commonly referred to as holding companies. They have, to a very large extent, been the cause of the great development of the electrical industry in the United States during the past 14 or 15 years.

"5. Customer ownership—best kind of public ownership.

"6. Government ownership—political ownership.

"7. Fallacy of government in industry.

"(a) Each encroachment but a step toward nationalization.

"(b) Bureaucracy.

"(c) Leads from democracy of like opportunity for all to autocracy of political machines built upon great business.

"(d) Political, not economic.

* 205 No. 71-A, p. 263.

208 No. 71-A, pp. 377-390.

206 *Exs.*, No. 4, p. 371.

209 No. 71-A, pp. 367-376.

207 No. 71-A, pp. 331-345.

210 No. 71-A, p. 376.

- "(e) Stifles initiative and incentive.
- "(f) Lacks energy and efficiency.
- "(g) Rarely ever originates or creates, merely copies and imitates.
- "(h) Completely unfair with taxpayers.
- "(i) Government ownership jobs usually cost from 2 to 6 times their engineers' estimates—once started, additional appropriations can be secured to complete.
- "(j) It usually takes from 2 to 6 times as long to complete a job as would private industry.
- "(k) Uncle Sam, unlike private industry, can take care of deficits via the tax route."²¹¹

9. A JUDGMENT REGARDING UTILITY PROPAGANDA

What judgment can be formulated from the amazing and almost incredible revelations that came out of the Federal Trade Commission's investigation into utility publicity? No one would deny to utility companies the right to present their case fully and adequately, to present it openly with a full disclosure of the interests of all who speak. The managements of utility companies should take every proper means to protect the legitimate investments of their security holders. The managements of utility companies are also in a singularly favorable position to assure a full presentation and discussion of all of the pertinent facts bearing upon public policy with respect to the regulation of their industry or with respect to direct government investment in utility enterprises. One may even go further and say that such full and open discussion of all utility issues is not only the right of those who represent utilities but that it is also their duty to the public generally as well as to their own investors.

But no such considerations can condone the conduct which has here been described; indeed, no condemnation is too severe for the devious ways in which these industries sought to overcome criticisms or for the practice of using supposedly disinterested individuals and organizations in their efforts to dupe the public. Here was propaganda at its worst: misrepresentation in the presentation of material facts, and concealment of the bias and self-interest of those ostensibly independent mouthpieces that simply echoed the sentiments of their principals.

It is interesting to inquire what the publicists and others thought of their own effort. Although they were anything but fluent and willing witnesses when they took the stand during the investigation, they were occasionally surprisingly frank in their correspondence with one another, and fortunately some of these letters survived to be included in the record. The following letter, dated August 12, 1927, from one of the staunch crusaders for the power companies to one of his colleagues provides a partial answer:

"What can we do when the financiers will inflate, overcapitalize, sell securities based on blue sky or hot air, and rates must be kept up to pay returns on said blue sky and hot air?

²¹¹ *Exs.*, No. 3, pp. 711-714.

"The best public relations stuff in the world is a nice little reduction in rates.' Do we get it? We do not. I know places where I believe a 13 cent top rate should be 8 cents.

"A municipally owned plant, city of 8,000, pays all indebtedness on plant without recourse to tax fund, lights white way streets, etc., without getting money therefor, but it is charged on the books, and has a top rate of 8 cents per kilowatt-hour, 4 cents power; B, 50 miles away from A, 8,000 population, better industrial town than A, better power load, exacts a top rate of 15 cents per kilowatt-hour, 8 cents for power.

"Reconcile these, if you can. I can't. I don't pretend to. There are no holes to be found in the municipal plant at A. . . .

"I believe in private initiative, but don't believe in subsidizing it 3 to 6 cents per kilowatt-hour. The privately owned industry should be ashamed of itself to permit a municipally owned plant, operated on the square, to undersell it 4 to 6 to 7 cents per kilowatt-hour. Don't say taxes. Taxes are less than \$.0023 per kilowatt-hour in this state. . . .

"Unless the industry is honest and on the level, it will kill itself. 90 per cent of it is honest. It must be 100 per cent honest. And it must come to recognize that public utilities are not private dice, or playing cards, or chips in a poker game, but public trusts to be administered carefully, cautiously, economically, with the interests of investors in fixed securities and the public, which are identical, coming before profit on common stock or upon inflation of securities." ²¹²

It may be noted that all of this unwanted propaganda was charged against the public, and it was even suggested that the more the misinformed public

²¹² *Exs.*, Nos. 5-6, pp. 306-307.

This letter was not the only occasion when such sentiments were expressed confidentially. The following interchange of letters between the author of the above letter and the editor of a utility magazine may close this part of the record. On June 14, 1927, the crusader wrote to the editor:

"As far west as St. Louis the fame of a protest made by a certain remote employee of large corporations against a certain proposed plan to offset certain political movements affecting private ownership of public utilities has penetrated. May I modestly claim blood brotherhood with the little hammered down Yankee who had the intestines, the intelligence, and the native honesty to make the protest as related to me.

"From your action, as reported to me, I take renewed courage and renewed faith that the 'government of the people, by the people, and for the people shall not perish from the earth.'" (*Exs.*, Nos. 5-6, p. 156.)

And on October 17, the editor wrote to the crusader:

"The thing about the utility industry that disgusts me is the lying, trimming, faking and downright evasion of truth, or violation of trust that marks the progress toward enormous wealth of some of the so-called big men in the industry. When I see some of these fellows waving the flag, I am filled with not only disgust but rage, for they are anything but patriots.

"I do not know whether I am going to stay in the utility industry or not. I would thoroughly enjoy fighting some of these faking patriots through the editorial page of an influential newspaper, and I do not believe I would have much difficulty in landing such a position. On the other hand, there are utility companies that try to play the game honestly and with whom I would be glad to be associated. I do not believe that this type of utility company is representative of 90 per cent of the industry by any means; I think it is about 10 per cent, I would enjoy being linked up with even so small a minority if it might impress upon the 90 per cent a realization of its responsibilities to the public, and inculcate in it a few germs of ordinary, garden-variety honesty." (*Exs.*, Nos. 5-6, p. 157.)

In April, 1930, the writer of the first letter committed suicide. (*Gruening, The Public Pays*, p. 247.)

persisted in their error the more it would cost them to be educated to the utilities' views.²¹³ This fact was very neatly put by one executive who was most generous in urging the expenditure of more money on annual conventions:

"All the money being spent is worth while. And I leave this thought with you executives: Don't quit now. At the next convention have more young ladies here so as to do the job right; and let off more men from the departments, so they may come here. Don't be afraid of the expense. The public pays the expense. Let us continue with big meetings."²¹⁴

But the public paid in many more serious ways than in the charges which were added to the operating expenses of the utilities. The propaganda, combined with effective lobbying, was responsible for much of the ineffectiveness of regulation throughout the country. The same propaganda made possible the fantastic holding-company pyramids which contravened all canons of economic and engineering common sense, and made possible the sale to the investing public of uncounted millions of worthless and overvalued stock. This propaganda stifled the criticisms which would have forced companies to adopt more progressive pricing policy, and the same propaganda blocked every attempt to secure cheaper light and power through public projects. Finally, the same forces undermined public confidence in the integrity of the press, the honesty of its schools, and the intelligence of its teachers.

It may be asked why a text on the economics of public utilities published in the 1940's should devote this much attention to the propaganda activities of the 1920's. If these attempts to influence public opinion were confined solely to the utility industry and if they were solely of historical interest, it would still be significant to be informed with respect to this critical matter in judging the regulation of the past. But the matter is of more than historic interest. Here is an object lesson in the conditioning of public opinion. The utility industries are not alone in seeking to create a favorable public opinion, and it is important that the characteristics of such efforts be recognized and identified if democracy is to function, particularly with respect to the public regulation of economic affairs.²¹⁵ Some utility companies are still engaged in the same intensive training of their employees to function as effective missionaries. Publicity of the old variety is still being sent out by some of those agencies which were most active in the subsidized distribution of utility propaganda.²¹⁶ Many

²¹³ *Exs.*, No. 1, p. 446.

²¹⁴ No. 7, p. 129. See also *Exs.*, Nos. 5-6, p. 171.

²¹⁵ The *New York Times* for Dec. 11, 1940 (29:8), carried the notice that the National Association of Manufacturers had undertaken to study 800 public school textbooks throughout the country to discover whether they contain anything prejudicial to our form of government, our society, or the system of free enterprise. See also the *New York Times* for Jan. 2, 1941 (21:4).

²¹⁶ The following editorial appeared in identical form, even to the last comma, in ten papers on the dates indicated:

"WHAT WOULD YOU CALL IT?"

"Those who have been arguing that if the extremists among the public power advocates have their way a tremendously far-reaching change in our form of government must follow, have not exaggerated. Their case is startlingly proved by a bill which was recently introduced in the Senate.

"This bill would create a Columbia Power Administration to supervise the Bonneville and Grand Coulee public power projects in the Pacific Northwest. It would confer dictatorial powers upon the Secretary of the Interior which are unprecedented in American history—and which are comparable to powers held by the ruling class in the totalitarian states.

of the "authoritative" studies which were prepared as propaganda studies still occupy places on library shelves. And presumably many of the "revised" textbooks still serve as the basis for instruction in the public schools. Although the cruder forms of propaganda have been less in vogue since the Federal Trade Commission's exposé, the more subtle exertions of influence continue, and will inevitably continue, as long as the preservation of huge aggregates of capital and the income therefrom seem to be subject to the vicissitudes of public opinion and governmental regulation.

The methods of controlling propaganda, without interference with free speech, have had scarcely any attention from those who are concerned with honest and effective governmental regulation. Active and efficient supervision of operating expenses by commissions can assure that in the future propaganda expenditures will not be charged to the consumer. Federal legislation does forbid political contributions by registered holding companies and their subsidiaries, and does provide that all lobbyists employed by utilities shall register with the Federal Power Commission.²¹⁷ A few progressive states have adopted similar legislation. But propaganda will not be rendered harmless until there is an assurance of full and complete disclosure of the interests of all those who speak on either side of any issue pertaining to the conduct and regulation of businesses affected with the public interest.

"If this sounds incredible, reflect upon what the bill provides. The Secretary would be given complete authority and discretion over the huge power projects. He would have the power to choose administrative officials, and they would be removable at his will. He would have control over amortization of costs and wholesale power rates. Acting through the administrator of the new bureau, he would be able not only to acquire by purchase, lease or condemnation transmission lines and power substations, but also to buy, lease or condemn private generating and distribution facilities whenever in his judgment such properties were so related to transmission lines as to make it uneconomical to acquire only parts of them. For financing purposes, the bill authorizes the Columbia Power Administration to authorize up to \$200,000,000 in bonds and notes—and every cent would be guaranteed by the United States government and thus would become, in effect, a first mortgage lien upon the property of every citizen.

"What this bill proposes is to give one official absolute life and death power over a great area so far as electricity is concerned. Local governments in the area would be powerless. Socialized power would be forced down the throats of the people whether they wanted it or not. Every decision of consequence would be made three thousand miles away in Washington, and local employees of the new Administration would simply be rubber stamps, putting into effect whatever policies the Secretary of the Interior wanted. That is centralized government with a vengeance.

"Legislation like this could destroy our kind of government far more surely and swiftly than any possible enemy beyond our shores."

The *Daily Breeze Courier*, Taylorville, Illinois, Nov. 27, 1940; the *Salem News*, Salem, Ia., Nov. 28; the *Laurens Citizen*, Dublin, Ga., Nov. 28; the *Carbondale Leader*, Carbondale, Pa., Nov. 29; the *Arizona Blade Tribune*, Florence, Ariz., Nov. 29; the *Woonsocket Call and Evening Reporter*, Woonsocket, R.I., Nov. 30; *Industrial News Review*, Portland, Ore., Dec. 3; *The Agitator*, Wellsboro, Pa., Dec. 4; the *Mobile Post*, Mobile, Ala., Dec. 5 (this editorial credited the *Industrial News Review*); *Nob Hill Register*, Portland, Ore., Dec. 6. Undoubtedly many, many more papers published this same "editorial."

"What would you call it?" Scarcely coincidence, and scarcely borrowing from one another. Canned editorials and the like are still being prepared and still finding their way to print with no indication to readers of the interested source from which they come.

²¹⁷ *Public Utility Holding Company Act of 1935*, Sec. 12 (h) and (i).

PUBLIC OWNERSHIP

I. THE EXTENT OF PUBLIC OWNERSHIP

The extent and importance of public ownership have varied for different utility industries, and for different stages in their evolution.

WATER SERVICE. In the discussion of the historical emergence of water service,¹ attention was called to the fact that public waterworks have been an important segment of the industry for the past hundred years.² In 1940, of the 1,807 cities having a population of 5,000 or over, 1,313 owned and operated their own water service.³ All twelve cities of a half-million and more population were served by public waterworks; all but three cities having a population between 200,000 and 500,000 had municipal systems, and even among the smaller cities and towns water service has customarily been provided by the community itself.

THE OWNERSHIP OF ELECTRIC UTILITIES. Public ownership in the electric field has been a focus of controversy and discussion. Though public plants have always been numerous, and though today more electric establishments are publicly than privately owned, the publicly owned sector of the industry has never possessed more than a small fraction of the total installed capacity, nor sold more than 8 per cent of the electric energy, nor served more than 15 per cent of the electric customers. Table 49 presents the data for commercial and municipal electric establishments from 1902 to 1937.

In terms of the number of plants, municipal establishments were at their peak in 1922 when there were 2,581 municipal and 3,774 commercial establishments. Thereafter the development of large central stations and interconnected systems resulted in a decline in the number of establishments for both commercial companies and municipalities, the decline in the former being the more marked. However, the reduction in the number of commercial establishments did not indicate any decrease in the number of communities served by private companies, whereas the decline in the number of municipal establishments generally signified the sale of the municipal plant to a private utility. The small isolated plant was unable to achieve the economies that came with technological progress. Although the municipal plant might be as efficient as the large private company in distribution, it was often at a disadvantage in generation.

The significance of the trend is better indicated by the figures for installed capacity and energy sold. Although there was no period after 1902 when the installed capacity of municipal plants did not increase, the increase in installed capacity of private establishments was much more marked, so that the percentage of installed capacity found in municipal plants declined steadily from 1902 to 1927, when municipal plants had slightly more than 5 per cent of the industry's capacity. Since 1927 the installed capacity of municipal plants

¹ Chapter II.

² Table 1.
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³ Table 2.

TABLE 49
COMMERCIAL AND MUNICIPAL ELECTRIC ESTABLISHMENTS

Census	Establishments				Capacity			
	Number		Per cent		In thousands of Kw.		In per cent	
Year	Com- mercial	Munic- ipal	Com- mercial	Munic- ipal	Com- mercial	Munic- ipal	Com- mercial	Munic- ipal
1902	2,805	815	77.5	22.5	1,099	113	90.6	9.4
1907	3,462	1,252	73.4	26.6	2,500	209	92.3	7.7
1912	3,659	1,562	70.1	29.9	4,766 ^d	397 ^d	92.8	7.2
1917	4,224	2,318	64.6	35.4	8,412 ^j	582	93.5	6.5
1922	3,774	2,581	59.4	40.6	13,407	906	93.7	6.3
1927	2,137	2,198	49.3	50.7	24,383	1,428	94.5	5.5
1932 ^a	1,627 ^b	1,802 ^c	47.5	52.5	32,648	1,975	94.3	5.7
1937 ^g	1,340 ^h	1,860 ⁱ	41.9	58.1	32,193	2,499	92.8	7.2

Census	Current Sold				Number of Customers			
	In millions of KwH		In per cent		In thousands		In per cent	
Year	Com- mercial	Munic- ipal	Com- mercial	Munic- ipal	Com- mercial	Munic- ipal	Com- mercial	Munic- ipal
1902	2,311	196	92.2	7.8	....	....	...	...
1907	5,573	289	95.1	4.9	1,663	284	85.4	14.6
1912	10,995 ^e	538 ^e	95.3	4.7	3,312	526	86.3	13.7
1917	24,723	1,029	96.0	4.0	6,202	977	86.4	13.6
1922	39,912	2,052	95.1	4.9	11,065	1,645	87.1	12.9
1927	75,345	3,667	95.4	4.6	19,661	2,129	90.2	9.8
1932 ^a	83,937 ^f	4,328 ^f	95.1	4.9	21,634 ^f	2,228 ^f	90.7	9.3
1937 ^g	93,524	5,674	94.3	5.7	24,433	2,657	90.2	9.8

^a For 1902-1932, Bureau of the Census, *Census of Electrical Industries: 1932*, p. 49.

^b Of this number, 704 were distributing units only.

^c Of this number, 937 were distributing units only.

^d For 1902-1912, Bureau of the Census, *Central Electric Light and Power Stations and Street and Electric Railways: 1912*, pp. 21, 22.

^e For 1902-1912, *Output of Stations (not current sold)*. Bureau of the Census, *Central Electric Light and Power Stations and Street and Electric Railways: 1912*, pp. 21, 22.

^f For 1917-1932, Bureau of the Census, *Census of Electrical Industries: 1932*, p. 70.

^g For 1937, Bureau of the Census, *Census of Electrical Industries: 1937*, pp. 44, 47, 49, 58, and 59.

^h Of this number, 522 were distributing units only.

ⁱ Of this number, 975 were distributing units only.

^j For 1917, Bureau of the Census, *Central Electric Light and Power Stations: 1917*, p. 64.

^k For 1922-1932, Bureau of the Census, *Census of Electrical Industries: 1932*, p. 19.

has grown more rapidly than has the capacity of the private utilities. The same trends are revealed in the data for current sold and for number of customers.

Municipal ownership does not constitute the only instance of public ownership in the electric field. The figures recently assembled by the Federal Power Commission of the installed capacity of electric generating plants (Table 50) show the increasing importance of other forms of public ownership. Municipal ownership still constitutes more than half the installed capacity in publicly owned generating plants, but the rate of growth in other forms of public ownership indicates a new basis on which the nonprofit sector of the industry

is expanding. Until 1925 the only form of federal electric project came as a by-product of the dams constructed by the Bureau of Reclamation for water conservation and irrigation. Since 1925, there has been a very marked increase in federal projects constructed for the purposes of flood control, navigation improvement, and power development. The last twenty years have also wit-

TABLE 50 *
INSTALLED CAPACITY OF ELECTRIC GENERATING PLANTS
1920 TO 1939 INCLUSIVE
(In Thousands of Kilowatts)

Year	Total—All Classes of Ownership	Privately Owned			
		Electric Utilities	Mining and Manufacturing	Railways and Railroads	Subtotal
1920	14,372	12,023	113	1,545	13,681
1925	23,512	20,045	268	1,772	22,085
1930	34,055	30,285	438	1,233	31,956
1935	36,074	31,820	449	1,190	33,459
1939	40,318	33,908	559	896	35,363

Year	Publicly Owned					
	Municipal Electric Utilities	Federal		Co-oper- atives, Power Districts, State Projects	Non- Central Stations	Subtotal
		Bureau of Reclamation	Other			
1920	601	10	0	21	59	691
1925	1,125	14	184	49	55	1,427
1930	1,601	32	194	154	118	2,099
1935	2,001	38	262	175	139	2,615
1939	2,807	768	883	333	164	4,955

* Source: Federal Power Commission, *Electric Power Statistics, 1939*, p. 16.

nessed the appearance of new nonprofit organizations, co-operatives, power districts, and state projects.

Two federal policies have been particularly significant in the recent expansion of publicly owned electric systems. As a part of its program to stimulate business activity, the Public Works Administration loaned funds to municipalities and other political sub-divisions for the construction and extension of power systems, as well as for other governmental purposes, such as the repair and building of schools, the erection of public markets, road building, sewer construction, et cetera. As of March 1, 1939, P.W.A. funds had been allotted in aiding the construction of some 340 non-federal electric power projects. (Table 51.) Of this number, 223 allotments were for additions to existing systems, and 117 were for new electric systems. These P.W.A. funds were ex-

tended in part as loans and in part as gifts. The estimated total cost of these non-federal electric power projects amounted to \$263,000,000, of which the P.W.A. allotted \$205,000,000—\$107,000,000 being loans and nearly \$98,000,000 grants-in-aid.

The development of federal hydroelectric projects in conjunction with reclamation work and multiple-purpose dams has provided a cheap source

TABLE 51 *
NON-FEDERAL ELECTRIC POWER PROJECTS FINANCED IN WHOLE
OR IN PART WITH P.W.A. FUNDS
(As of Mar. 1, 1939)

		Num- ber of Kilowatt proj- capacity ects installed	Loans	Grants	Total allotment	Estimated total cost
<i>New electric systems</i>						
Hydro	16	516,955	\$ 76,797,800	\$48,736,234	\$125,534,034	\$141,195,182
Steam	3	21,750	.....	1,858,346	1,858,346	4,128,880
Diesel and other	52	34,138	2,600,300	3,357,232	5,957,532	8,698,051
Distribution and transmis- sion	46	.....	8,045,850	10,534,638	18,580,488	27,040,468
Total	117	572,843	87,443,950	64,486,450	151,930,400	181,062,581
<i>Additions to electric systems</i>						
Hydro	16	19,287	16,060,300	17,820,267	33,880,567	42,978,970
Steam	94	197,530	2,046,055	10,722,543	12,768,598	27,286,171
Diesel and other	63	25,356	244,485	2,042,903	2,287,388	4,928,487
Distribution and transmis- sion	50	.....	1,698,750	2,509,605	4,208,355	6,746,941
Total	223	242,173	20,049,590	33,095,318	53,144,908	81,940,569
Grand total	340	815,016	107,493,540	97,581,768	205,075,308	263,003,150

* Source: U.S. Federal Works Agency, *America Builds, The Record of PWA*, p. 278.

of wholesale power, and it has been the policy of the federal government to give preference to public agencies and nonprofit organizations in the sale of this power. In the Tennessee Valley and in the Pacific Northwest, in particular, the development of public utility districts and power co-operatives has been greatly stimulated by the availability of cheap wholesale power.

GAS UTILITIES. Public ownership in the supply of gas service has never been quantitatively important. Table 52 presents the statistics with respect to manufactured-gas utilities for the period 1914 to 1935. In 1914 over 11 per cent of the establishments manufacturing gas were municipally owned; by 1921 only 5 per cent were municipally owned. After 1921, the number of commercial gas utilities declined more rapidly than the number of municipal units, so that as of 1935 approximately 6½ per cent of the manufactured-gas utilities were publicly owned. Statistics of total production reveal that municipal gas utilities at no time have produced as much as 2 per cent of the output. They are typically small.

In 1940 there were 65 municipally owned gas utilities to be found in the

1,806 cities having a population of 5,000 or over. Forty-one of these establishments (2.3 per cent of the total number of cities) were engaged both in the manufacture and distribution of gas; while 24 more (1.3 per cent of the total number of cities) were engaged only in the distribution of gas.⁴ A number of the distributing units are supplying natural gas.

TABLE 52
MANUFACTURED-GAS UTILITIES
1914-1935

Year	<i>Establishments</i>				<i>Total Output</i>			
	Number		Per Cent		M cu. ft. in thousands		Per Cent	
	Com- mercial	Munic- ipal	Com- mercial	Munic- ipal	Com- mercial	Munic- ipal	Com- mercial	Munic- ipal
1914 ^a	1,146	138	88.78	11.22	202,002	1,637	99.20	0.80
1919 ^a	965	57	94.42	5.58	341,934	2,186	99.36	0.64
1921 ^b	906	48	94.97	5.03	329,995	4,003	98.80	1.20
1923 ^c	891	48	94.89	5.11	382,084	4,463	98.85	1.15
1925 ^c	867	52	94.34	5.66	390,444	5,077	98.72	1.28
1927 ^c	782	46	94.44	5.56	440,233	5,224	98.83	1.17
1929 ^c	712	42	94.43	5.57	445,273	5,444	98.79	1.21
1931 ^d	600	38	94.04	5.96	392,184	5,513	98.61	1.39
1935 ^e	486	34	93.46	6.54	335,880	6,152	98.20	1.80

Sources:

^a *Fourteenth Census of United States, 1920*, Vol. X, pp. 706, 725.

^b *Biennial Census of Manufactures, 1921*, pp. 801, 821.

^c *Fifteenth Census of United States, 1930, Manufactures, 1929*, Vol. II, pp. 751-763.

^d *Biennial Census of Manufactures, 1931*, pp. 655, 658, 664.

^e *Biennial Census of Manufactures, 1935*, pp. 739, 742, 745.

ELECTRIC STREET RAILWAYS. The municipally owned electric street railway is almost a rarity in the United States. Table 53 presents the statistics for the census years from 1912 to 1937. The number of municipal street railways reached their maximum in 1927 when there were 21 municipal systems in comparison with 942 commercial systems. The trend toward abandonment which set in in 1917 continued throughout the period and by 1937 there were only 279 commercial electric street railways and 15 municipal street railways. In percentage terms, the municipal systems have constituted less than 5 per cent of the total number, have operated less than 5 per cent of the track mileage, and until 1937, had carried less than 5 per cent of the passengers.

2. PUBLICLY OWNED ELECTRIC UTILITIES

Since limitation of space makes it impossible to present any detailed discussion of public ownership with respect to all classes of utilities, the remainder

⁴ *The Municipal Year Book, 1940*, pp. 21, 27, 28-60. Philadelphia (which owns but does not operate its plant), Houston, Indianapolis, Memphis, Omaha, and Richmond make up the cities of 100,000 or more having municipal manufacturing and distributing gas utilities. Los

of the chapter will be devoted to a consideration of public ownership in the electric industry. This emphasis may be defended on grounds of the greater current interest in publicly owned electric undertakings and also the greater variety of engineering, economic, and political problems that have arisen in this field. The data with respect to publicly operated power projects are more adequate. And finally, the public ownership problem of the future promises to be largely one of electric service.

In the United States, publicly owned electric utilities have assumed several

TABLE 53 *
ELECTRIC STREET RAILWAYS

Census Year	Companies				Track Operated				Passengers			
	Number		Per cent		Total miles		Per cent		In millions		Per cent	
	Com- mercial	Munic- ipal	Com- mercial	Munic- ipal	Com- mercial	Munic- ipal	Com- mercial	Munic- ipal	Com- mercial	Munic- ipal	Com- mercial	Munic- ipal
1912	1258	2	99.8	0.2	.....	.....	...	..	.....	...	...	..
1917	1292	8	99.3	0.7	.....	.....	...	..	.....	...	...	..
1922	1183	17 ¹	98.6	1.4	43,136	795	98.2	1.8	14,846	485	96.8	3.2
1927	942	21 ¹	97.8	2.2	39,788	934	97.7	2.3	14,274	627	95.8	4.2
1932	689	17	97.6	2.4	30,555	992	96.9	3.1	9,475	413	95.8	4.2
1937	279	15	94.9	5.1	22,679	1,091	95.4	4.6	8,641	776	91.8	8.2

¹ State-operated railway (Capital Car Line, Bismarck, N. Dak.) is included with municipals.

* Source: Bureau of the Census, *Census of Electric Industries, Electric Railways, 1922*, pp. 235-239; 1932, pp. 5, 106; 1937, p. 11.

forms. Historically, public ownership has meant ownership and operation by a municipality. At present, however, the rendition of electric service by public utility districts is of increasing importance and promises to become still more significant. Since 1933 electric service has been brought to many small communities and rural sections by co-operative undertakings. The federal government, as part of its programs for reclamation, flood control, and navigation improvements, has embarked upon an important series of hydroelectric developments which have become of dominant significance in their respective sections of the country. Each of these categories of publicly owned and operated electric enterprises merits study.

3. MUNICIPAL ELECTRIC SERVICE

HISTORICAL BEGINNINGS. Many combinations of circumstances have set the stage for the establishment of municipal electric enterprises. (1) Some municipal plants were started as the only means of providing the community with electric service. (2) Dissatisfaction with the service or rates of privately owned enterprises has almost universally been a factor in the establishment of public plants in communities already served by private companies. (3) The

Angeles, Duluth, and Long Beach are the only additional cities of 100,000 or more having municipally owned gas-distribution systems.

opportunity to utilize a valuable power site accounts for the establishment of some of the largest and most successful public undertakings.⁵ (4) A number of municipalities have regarded their electric undertaking as a source of income. The so-called "taxless towns" are well-known examples. And in a number of communities the municipal plants are constantly being drawn upon for funds by the city.⁶ (5) The immediate stimulus to the development of some municipal projects has doubtless come from the opportunity to borrow funds at unusually low interest rates. Many of the municipal enterprises started during the 1930's might very probably not have been undertaken without the opportunity to borrow federal funds. (6) The opportunity to buy wholesale power at very low rates, notably from Boulder Dam, the Tennessee Valley Authority, and the Bonneville Power Administration, have also stimulated a widespread movement toward public electric systems in those sections of the country. (7) The establishment of some municipal electric undertakings must be credited to the sales activities of manufacturers of Diesel generators, particularly the Fairbanks-Morse Company.

THE ESTABLISHMENT OF A MUNICIPAL UTILITY. All but four states⁷ provide that municipal utility enterprises may be established only by vote of the electorate.⁸ In a majority of the states the decision to establish a municipal plant requires the affirmative vote of the municipal council as well as a vote of the electorate.⁹

There are several possible methods by which the acquisition of a plant by the municipality may be effected: by proceeding under an indeterminate franchise, by purchase of the property of the private utility, or by condemnation proceedings. Where the utility is operating under an indeterminate permit, it has presumably consented to the acquisition of its properties by the mu-

⁵ In California, the cities of Los Angeles and San Francisco, and the Imperial and Modesto irrigation districts, are illustrations. For many years the city of San Francisco generated, but did not distribute, electric power. The decision of the Supreme Court in *United States v. San Francisco*, 310 U.S. 16 (1940), will result in the city's undertaking the distribution of its own power.

The same principles—that is, the development of multiple-purpose projects—apply to power developments in connection with the Reclamation Bureau's work and, of course, in the Tennessee Valley Authority.

⁶ Columbus, Ohio, Burlington, Vt., and Norwich, Conn., may be cited as specific instances that could be multiplied many times over.

⁷ Delaware, Georgia, Idaho, Maine, and the District of Columbia.

⁸ In forty-one states a single election decides the issue. If the public ownership proposal is defeated, only one election in one year may be held in Florida, and in Indiana, only one election in any two-year period. Connecticut requires an affirmative vote in two elections. Massachusetts requires that the question be submitted in two elections in towns. In New Jersey two elections may be held if the council deems it advisable.

A majority vote suffices to carry the election, except in Minnesota and Nebraska where a three-fifths majority is required.

In Pennsylvania and Rhode Island the statutes apply to waterworks only.

In Maryland and Oklahoma, the statutory provisions are applicable to waterworks only and a vote of the council is also required.

The West Virginia statute provides for an election if the utility has a franchise.

⁹ These provisions are affirmatively stated in twenty-five statutes, and implied in four others. In Louisiana, the consent of the mayor is also required. Four states, Florida, Minnesota, Massachusetts, and Vermont, require a two-thirds vote in the municipal council, and Massachusetts requires such a vote in two successive years.

Apparently a vote of the council suffices to determine the question in Louisiana, Michigan, Nevada, New Jersey, and Utah, unless a designated percentage of the voters petition for an election.

municipality on payment of fair price.¹⁰ In launching a municipal utility, statutory provision is made for the purchase of the property of the private utility in all but two states,¹¹ and is required by law in two states.¹² It is sometimes desirable, or even essential, for the municipal undertaking to own property outside of the state, yet only three states have provided for this contingency.¹³

There is considerable variation in the statutory provisions with respect to the degree of control exercised by regulatory authorities over the establishment of municipal utility enterprises. In some states, the municipality must obtain a certificate of public convenience and necessity, or secure the approval of the commission as a prerequisite to establishment of a municipal undertaking.¹⁴

The purchase price is often a source of disagreement between the municipality and the private company whose utility assets are being acquired. Most states have provided alternative procedures for its determination. By far the commonest is that the purchase price shall be fixed by agreement or arbitration.¹⁵ A few states provide that the price shall be determined by the commission.¹⁶ Nearly all states provide that the municipality may acquire the utility assets of the private company by condemnation.¹⁷ A very considerable number of states provide for a judicial determination of the purchase price either in the first instance or on review,¹⁸ and two states provide for the fixation of a purchase price in the utility franchise.¹⁹

In the statutory provisions governing the inauguration of municipally owned utility enterprises, certain fundamental principles of public policy should be observed. So important is the rendition of a satisfactory utility service that every municipality should have the right to undertake to serve itself whenever its inhabitants are persuaded that a program is desirable.²⁰ However, entry upon public utility service is a serious step and it is not unreason-

¹⁰ The statutes provide for indeterminate permits in Arkansas, California, Colorado, Illinois, Indiana, Louisiana (in cities of 10,000), Michigan (permissive), Minnesota, Montana, Ohio, South Carolina, Wisconsin, and Wyoming.

¹¹ Delaware, Maine, and the District of Columbia.

¹² Arizona and Connecticut. The Colorado statutes forbid the construction of a competing plant. The Florida statutes permit the construction of a utility plant only with the permission of the private company that is already serving the community.

¹³ Missouri, Oregon, and Wisconsin.

¹⁴ Arizona, Arkansas, California, Colorado, Maryland (with some exceptions), New York, Pennsylvania (if the community is served by a private utility), West Virginia, Wisconsin, and Wyoming.

¹⁵ Arizona, Connecticut, Florida, Indiana, Kansas, Kentucky, Massachusetts, Minnesota, Missouri, Montana, Nebraska, New Hampshire, North Carolina, Ohio, Pennsylvania, South Dakota, Vermont, and Washington.

¹⁶ Arkansas, California, Colorado, Massachusetts (if the parties cannot agree), New Hampshire (on the petition of either party), Ohio (if condemnation is resorted to), South Carolina (if the parties cannot agree), and Wisconsin.

¹⁷ The exceptions are Delaware, Maine, South Dakota, and the District of Columbia. These provisions are applicable to waterworks only in New Mexico, Oklahoma, Pennsylvania, Rhode Island, and Utah. Statutory provisions permit the electorate to intervene and halt the condemnation proceedings in Ohio, Nebraska, Utah, and Wisconsin.

¹⁸ Arkansas, California, Connecticut, Florida, Iowa, Louisiana, Maryland, Michigan, Missouri, Nebraska, New Hampshire, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, West Virginia, and Wisconsin.

¹⁹ Alabama and Michigan. Illinois permits it.

²⁰ Opponents of public ownership have frequently sought to secure the passage of laws that have the effect of making it difficult, if not in some instances impossible, to establish municipal utilities.

able to provide a procedure which will assure a careful consideration of the advisability of the undertaking. It is probably desirable that the decision be submitted to the electorate, and the obvious method of bringing the question to a vote is an action by the municipal council to establish a public utility enterprise; that is, the decision may be made by the council and ratified by the electorate. But it should also be possible by petition to bring the question to a vote, without awaiting action by the municipal council. A majority decision should be sufficient to determine the question. The requirement of preliminary petitions signed by a large proportion of the electorate, the requirement of more than a majority vote by either the municipal council or the electorate, and the requirement that such questions be submitted twice to the decision of either the city council or the electorate, are undesirable obstacles to the establishment of municipal undertakings.

The question of the proper purchase price raises controversial issues. The same principles should control the determination of the value of the utility assets for municipal purchase as should apply to the determination of the rate base, and the appropriate body to make the determination is presumably the commission. The appropriate standard would be the net-investment cost of the utility assets, if not in excess of their present fair value.²¹

The disestablishment of municipal utility undertakings is also governed by statute in most states. The possibility that the municipality may wish to lease its utility enterprise for operation either by another municipality or by a private company is recognized by a majority of states.²² In some instances provision is made for giving the electorate a voice in the decision to lease, either by requiring their prior approval or by permitting an effective protest to be made by petition.²³ The statutes are about equally divided as to the procedure by which the sale of a municipality's utility properties may be made

²¹ There are many ways in which the establishment of municipal ownership may be discouraged—the hostile attitude of regulatory authorities, procedural obstacles to the launching of municipal enterprises, handicaps to the financing or operation of municipal plants, and the requirement that the municipality buy the properties of the existing utility at an excessive price. One of the most extraordinary (extraordinary because they are the negation of the fundamental principles of utility regulation) sets of statutory provisions to impede the growth of public ownership has been provided by Connecticut. Any Connecticut town deciding to establish a public plant must purchase the plant of the existing utility, if the company elects to sell; moreover, if a single corporation should be supplying both electric and gas service, the town must be prepared to purchase both plants. (Conn., *General Statutes, Revision of 1930*, Sec. 534.) Furthermore, the statutes specified that the value of the plant should be determined as follows: "The price to be paid for such plant, whether gas, electric or both, shall be its fair market value for the purpose of its use, no portion of such plant to be estimated at less than its fair market value for any other purpose, including as an element of value the earning capacity of such plant, based upon the actual earnings being derived from such use at the time of the final vote . . . and also including the market value of any other locations or similar rights acquired by the owners . . . intended and adapted for use in connection with such plant. . . ." (*Ibid.*, Sec. 536.) (Italics supplied.)

²² The states having no statutory provisions are Arkansas, Colorado, Connecticut, Delaware, District of Columbia, Florida, Kansas, Maine, Massachusetts, Nebraska, New Hampshire, New York, North Carolina, Oregon, Rhode Island, South Carolina, Tennessee, Vermont, and Wyoming.

²³ Georgia, Idaho, Illinois, Kentucky, Louisiana, Minnesota, Missouri, Montana, New Jersey, New Mexico, South Dakota, Texas, Utah, Washington, West Virginia, and Wisconsin. In Maryland the commission must approve the leasing arrangement, while in Nevada, the decision rests with the council.

effective, some requiring a vote of the council, others, a vote of the electorate, a few, the approval of the commission, and a dozen, the approval of both council and electorate.²⁴ Wide differences exist as to the procedure by which the sale price shall be fixed: in some states it is to be determined by agreement;²⁵ in others the municipality fixes a price.²⁶ The requirement that the commission approve the sale is rare.²⁷

THE FINANCING OF MUNICIPAL UTILITIES. Publicly owned enterprises may be financed by the issue of municipal bonds, or by the issue and sale of bonds which are secured by a lien only upon the earnings and assets of the utility undertaking. The significant difference between these two methods lies in the fact that the utility bonds, or as they are sometimes called, revenue bonds or revenue warrants, do not come within the statutory debt limit established for the municipality; whereas financing by general municipal bonds will be impossible, if the sum required would cause the municipality to exceed its debt limit.

The present trend is in the direction of liberalizing the statutory provisions with respect to financing. Most states permit the use of utility bonds or revenue bonds.²⁸ Where a municipal utility undertaking is financed by the issue of general bonds which are a lien upon the tax revenues of the city and come within its statutory bond limit, it is usual to require that such bond issues shall have the approval of the voters,²⁹ a requirement not customary for the issue of revenue bonds. A number of states permit the use of both types of financing. In addition to the limitations on utility bond issues which follow from the overall limits on the bond issue of a municipality, the statutes of some states provide for specific limitations on the bonds which may be issued

²⁴ A vote of the council is provided for in Alabama, Colorado, Idaho, Kansas (implied), Minnesota, Mississippi, Nevada, New Jersey, North Carolina, Ohio, Tennessee, Vermont (implied), Washington, West Virginia, and Wisconsin; more than a majority vote is required in Indiana, Massachusetts (in two successive years), Montana, and Virginia; and the concurrence of the mayor is required in Arkansas. A vote of the electorate is either stipulated or may be forced by a petition in Alabama, Colorado, Georgia, Idaho, Indiana, Louisiana, Maryland, Michigan, Mississippi, Missouri, Montana, New Jersey, New Mexico, North Dakota, South Dakota, South Carolina, Tennessee, Texas, Utah, Washington, West Virginia, Wisconsin, and Wyoming, with more than a majority vote being required in California, Kentucky, Massachusetts, Minnesota, and Oklahoma. The approval of the commission is required in Maryland, Massachusetts (in addition to that of the council and electorate), and Wisconsin.

²⁵ Maryland, South Carolina, Tennessee, and Wisconsin.

²⁶ Georgia, Mississippi, Montana, and New Mexico. Indiana provides for fixing the price by appraisers, and in other states the property is to be disposed of to the highest bidder—California, New Jersey, North Carolina, Oklahoma, Utah (if the bid is equal to the appraised price), Washington, and Wyoming. In Alabama the council fixes the minimum price.

²⁷ Maryland, Vermont, and Wisconsin.

²⁸ Alabama, Arizona, California, Colorado, Delaware, Florida, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Montana, New Hampshire, New Mexico, New York, North Carolina, North Dakota, Ohio, Oregon, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, and Wisconsin. A number of states permit the use of such revenue bonds only with respect to waterworks: Arkansas, Connecticut, Georgia, Nebraska, Nevada, Pennsylvania, and West Virginia. See also Knappen, *Revenue Bonds and the Investor*.

²⁹ Arizona, Connecticut, Florida, Indiana, Kansas, Louisiana, Maryland, Massachusetts, Minnesota, Mississippi, Montana (gas only), Nebraska (if exceeding \$250,000), Nevada, New Hampshire, New Jersey, New Mexico (waterworks only), New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Utah, Vermont (the approval of the commission is required), Virginia, Washington, Wisconsin, and Wyoming.

to finance utility undertakings.³⁰ In most of the states an accounting is required in respect to the capital expenditures which the municipality makes in acquiring its utility facilities.³¹

THE MANAGEMENT OF MUNICIPAL UTILITIES. Good management is as essential for the municipal utility as for the privately operated utility companies. Where municipal undertakings fail to achieve efficient management, the fault is likely to lie in the fact that management is entrusted to officials whose decisions are influenced by political considerations or whose time and energies are absorbed by other governmental responsibilities. The management of a publicly owned utility should be lodged in a responsible and independent board of directors, whose members are selected for their competence and whose decisions are free from the pressures of political considerations. A majority of the states having legislation on the matter have provided that the management of municipal utility enterprises shall be the responsibility of a separately constituted and independent board.³² Where the statutes are silent, the municipal utility may presumably be managed directly by the municipal council or by some subordinate official designated by the council and responsible to it.³³

ADMINISTRATION OF UTILITY FINANCES. Separate accounting and administration of utility income and expenditures contribute to the success of a municipal utility undertaking. Where utility revenues are mingled with the ordinary tax revenues of the municipality, there can be no assurance that the utility undertaking will not be subsidized by appropriations from tax revenues, or conversely, that the consumers will not be overcharged in order to relieve the taxpayers of a part of their burdens. Despite the importance of segregating utility funds, most statutes governing municipal utilities permit, or even provide, that revenues shall be paid in to the municipal treasury.³⁴

The relations that should prevail between the municipality and its utility

³⁰ Alabama, Florida, Illinois, Indiana, Kansas, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, South Carolina, Utah, Virginia, Washington, Wisconsin, and Wyoming. These limitations are usually expressed as a percentage of the taxable value of the property within the community, the percentage ranging from 2 per cent to 10 per cent.

³¹ Alabama (waterworks), Arizona, Arkansas, California, Colorado, Connecticut, Illinois, Kansas, Massachusetts, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina (waterworks), Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming.

³² Connecticut, Florida, Indiana, Iowa, Kansas, Kentucky, Louisiana, Massachusetts, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, North Carolina, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, and Wisconsin.

Arkansas, New York and Wyoming have provided for such management with respect to waterworks.

Colorado seems to be the only state that has specifically provided that the municipality may negotiate management contracts with other utilities.

³³ Michigan, Nevada, New Jersey, New York, and North Carolina provide for management by the municipal council in their statutes. By implication, this kind of management is indicated in Alabama, Washington, West Virginia, and New Mexico.

³⁴ The following states provide specifically for the separation of utility finances from those of the municipality: Illinois, Indiana, Kansas, Kentucky, Minnesota, Mississippi, Missouri, Nebraska, Nevada, Pennsylvania, South Dakota, Tennessee, Texas, Washington, and Wisconsin. Similar provisions with respect to waterworks are found in the statutes of Alabama, Arkansas, Connecticut, and North Carolina; and for waterworks and city radio, in New Jersey. In Idaho a two-thirds vote of the electorate may necessitate such separate financial administration. In Massachusetts the depreciation fund must be separately administered.

undertaking have frequently been outlined in the literature of the subject and in the discussions of regulatory bodies. In undertaking to render a utility service, the municipality assumes certain responsibilities: to provide the capital assets necessary to perform a public service adequately and efficiently; to establish an independent, nonpolitical, and competent management; to preserve a segregation of funds, applying utility revenues only to utility purposes, and to pay at regular rates for all service which the municipality or any of its departments receives from the municipal utility. And certain complementary responsibilities, chiefly of a financial nature, rest upon the municipal utility and its management: to provide an adequate and efficient service; and to establish rates calculated to yield revenues sufficient to cover all costs, including specifically proper provision for depreciation, a fair rental for space occupied in public buildings, a proportional part of the salaries of all municipal employees who perform services for the utility enterprise, taxes equivalent to those that would be paid by a privately owned utility possessing the same property, and interest charges on the bonds with which the utility property has been financed.³⁵

That a municipal utility should make provision for depreciation of its physical assets is quite generally recognized.³⁶ A large proportion of municipal plants follow an even more conservative policy than privately owned companies; they not only make provision for a depreciation reserve adequate to cover the full retirement costs of depreciable property, but also apply their surplus income to the amortization of the bonds and other financial instruments with which utility properties are financed.³⁷ Of course, the practice of accruing full depreciation reserves and at the same time providing for amortization of outstanding securities results in a double charge on consumers which it is difficult to justify. Future consumers may benefit from such a policy since, when the municipality owns the plant debt-free, it will no longer be necessary for the rates to cover any item either for interest on invested capital or for the amortization thereof.

That municipal utilities should pay to the city a sum equivalent to the taxes that would be collected were the property owned by a private corporation is a proposition which does not command universal assent. Only three states make provision in their statutes for tax payment by municipal utilities.³⁸ If taxes

³⁵ *Re Holyoke Petition*, 21 Ann. Rep. Mass. G. & E.L.C. (1905); *Re Light and Water Commission*, P.U.R. 1915E, 539 (Wis., 1915); *Re Thompson Falls*, 22 P.U.R. (N.S.) 337 (Mont., 1938); *Re Stoughton*, 3 P.U.R. (N.S.) 295 (Wis., 1934); *Re Elroy*, P.U.R. 1933C, 421 (Wis., 1932).

³⁶ The statutes of several states require that municipal undertakings make provision for depreciation: Arizona, California, Colorado, Connecticut, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Massachusetts, Minnesota, Mississippi, Missouri, Pennsylvania, South Dakota, Tennessee, Texas, Utah, Washington, and Wisconsin; and three states, Alabama, Arkansas, and West Virginia, have similar statutory provisions governing waterworks.

³⁷ A number of states require the amortization of the bonds with which the utility properties are financed: Alabama, Arizona, Florida, Idaho, Illinois, Indiana, Kansas, Kentucky, Louisiana, Massachusetts, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Mexico, New York, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Washington, and Wisconsin; amortization is required with respect to waterworks under the laws of Arkansas, Connecticut, Maryland, New Jersey, North Carolina, and West Virginia; and with respect to transit properties, by Michigan.

³⁸ Illinois, Indiana, and Mississippi. Illinois simply requires that the municipal utility shall record in its accounts a sum equal to the taxes that would be assessed against a private utility.

are not assessed against the utility enterprise, consumers will be paying less than the full cost of the service (including the cost of those services which the municipal government normally and inevitably renders to all business undertakings) and taxpayers will be subsidizing the utility enterprise to the same extent. An equally important principle that is generally ignored is that the municipality should pay at regular rates for all services received from the utility enterprise. A failure on the part of the municipality to pay at the appropriate rate for all service shifts a part of the municipal expenses to the other consumers of the utility service. Taxpayers should not be subsidized by the consumers. Despite the importance of the "free service issue," very few of the states have legislated on the subject.³⁹

In the interests of sound financial management, it is advisable that all surplus earnings that are not applied to rate reduction be appropriated to retire outstanding bonds. Eight states require that surplus utility earnings shall be used only to retire the bonds of the utility enterprise.⁴⁰ As legal owner of the utility enterprise in its proprietary capacity, the surplus earnings of a municipal utility, unless the statutes provide otherwise, belong to the municipality.⁴¹

COMMISSION JURISDICTION OVER MUNICIPAL UTILITIES. Whether municipal utility enterprises should be subject to the regulatory jurisdiction of the state commission is a matter of sharp dispute. Against state regulation of municipal utilities, it is urged that there is no conflict of interest between consumers and those who manage the public enterprise, since the management is under no necessity of making profits and cannot benefit from any profits that are earned (a somewhat different situation exists, however, when a municipal utility operates outside the corporate limits of the municipality), that municipal officials are sensitive to the public criticism as to service or rates, that compliance with regulatory requirements would create unnecessary costs, and that regulation would open the door to undue interference by the commission in the affairs of the municipality.⁴²

³⁹ In six states, Kentucky, Massachusetts, Mississippi, South Dakota, Tennessee, and Wisconsin, statutory provisions forbid the rendition of free service by the utility to the municipality. Service without cost to city departments must be rendered by municipal utilities in Indiana only, and here only to first-class cities within the utility territory. In Illinois, services are rendered without actual payment by the municipality but the utility's books must show the value of such service. In Ohio and Texas, cities may order that free service be rendered to municipal departments and institutions.

In one interesting decision, the Wisconsin Public Service Commission ordered the municipality to pay the capital cost of installing two Diesel-engine generating units to recompense the municipal utility for the free service which has been performed for the municipality and to compensate for the utility revenue which had been mingled with city funds and applied to ordinary city expenditures. (*Re Stoughton*, 3 P.U.R. [N.S.] 295 [Wis., 1934].)

⁴⁰ Alabama, Arkansas, Nebraska (invested for the utility's account), Nevada, Pennsylvania, West Virginia, Wisconsin, and Wyoming.

⁴¹ Three states (Idaho, Oregon, and Texas) provide specifically that surplus earnings shall be payable to the city only after all outstanding indebtedness of the utility enterprise has been retired. A few more states permit surplus utility earnings to be paid to the city, some requiring prior provision for sinking fund and other expenses (Indiana, Iowa, Kentucky, New Jersey [waterworks], and New Mexico), while two states, Mississippi and Tennessee, limit the payments to the city to a 6 per cent cumulative return on the investment and require all further surplus funds to be applied to rate reductions.

⁴² The municipal plant, independent of the commission, has been thought of as a competing

The advantages that would follow from the exercise of commission supervision over municipal utility enterprises appear to be more weighty, especially where the municipality is small and the utility is managed by part-time officials. There is always the possibility that the municipality may establish unnecessarily high rates for the utility service, perhaps as a result of yielding to the temptation to use the public utility as a taxgatherer, and perhaps as a consequence of an attempt to assure that consumers outside the corporate limits of the municipality shall not be supplied with service at the cost of municipal taxpayers. Discriminations in charges or in service may occur through inadvertence. Where the municipal plant is small and isolated, commission supervision may be of material assistance in keeping service standards up to a progressive level. Finally, the commission may be able to give helpful advice and counsel to the management.⁴³

Extent of supervision. Regulation of municipal utilities is not an established feature of state control. Only twenty-six states have provided for any commission control over publicly owned utilities,⁴⁴ and in some of these states the scope of regulation is limited. While in most states it is recognized that the legislature may confer upon the commission jurisdiction over the municipal utility undertakings,⁴⁵ in other jurisdictions it has been held that the legislature is without constitutional authority to establish commission regulation over municipal utilities.⁴⁶

Rates. Commission jurisdiction over the rates charged by municipal utilities would appear to be of critical importance. Twenty states have conferred such authority upon their commissions.⁴⁷ Such supervision is desirable not simply because of the possibility that the rates may be excessive or discriminatory, but also because rate making presents highly technical problems

method of rate regulation, strengthening the position of the commission and encouraging a more vigorous regulatory policy.

⁴³ However, in the case of the larger municipal plants, progressive managements have left little opportunity for the commission to make any contribution to the efficiency and success of their operations.

⁴⁴ Arkansas, Colorado, Connecticut, Georgia, Indiana, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Missouri, Montana, Nevada, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont (except for city waterworks), West Virginia, Wisconsin, and Wyoming. Limited commission jurisdiction over municipal utilities is provided under the statutes of California (only for municipalities that have surrendered authority over utilities—*Deering, General Laws of California, 1937, Act 6389*), and Washington. Doubts exist as to the commissions' authority in New Mexico and Utah.

⁴⁵ The constitutionality of such statutes has been upheld in Pennsylvania and West Virginia: *Shirk v. Lancaster*, 313 Pa. 158, 169 Atl. 557 (1933), and *Wheeling v. Benwood-McMechen Water Co.*, 115 W.Va. 353, 176 S.E. 234 (1934). In two other states, Illinois and Maine, the courts have ruled that municipal utility enterprises are public utilities and as such within the jurisdiction of the commission: *Hairgrove v. Jacksonville*, 366 Ill. 163, 8 N.E. (2d) 187 (1937); *Kennebunk & Wells Water Dist. v. Wells*, 128 Me. 256, 147 Atl. 188 (1929).

⁴⁶ *Menderson v. Phoenix*, 51 Ariz. 280, 76 P. (2d) 321 (1938); *Holyoke v. Smith*, 75 Colo. 286, 226 Pac. 158 (1924); *Logan City v. Public Utilities Comm.*, 72 Utah 536, 271 Pac. 961 (1928).

⁴⁷ Arkansas, California (limited), Georgia, Indiana, Kentucky, Maine, Maryland, Missouri, Montana, Nevada, New Hampshire, New Jersey, New York, North Dakota, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, West Virginia, Wisconsin, and Wyoming. In Alabama, the maximum rate prescribed by the commission for similar cities is specified by statute for the municipal utility. And in Massachusetts the approval of the commission is required for all gas and electric rates established at less than production cost.

wherein the commission's competence may prove most helpful to the municipal utility.⁴⁸

Should the rates charged by a municipal utility be established in conformance with the standards which govern rate making for privately owned utilities? Should these rates be designed to afford a fair return on the investment in utility assets? Where bonds are still outstanding, it is clear that the rate must suffice to cover the cost plus the interest charges. If the rates are somewhat higher so that some surplus earnings may be applied to the amortization of the bond issue, no great harm is done to the consumers. On the other hand, if the rates are deliberately established to provide for the rapid amortization of the outstanding bonds, it may be said that existing consumers are being required to provide a plant with which future consumers will be served. If the issue does not often appear acute, it is because municipal utilities are commonly able, while maintaining lower rates than those of neighboring private companies, to cover all their costs and provide for amortization.

But what rate policy should prevail when all of the outstanding bonds have been retired? This was the question presented in a series of cases involving the Village of Boonville, New York, which operated a municipal electric plant serving consumers both in the Village and in nearby communities.⁴⁹ The Village claimed the right to charge rates which would yield a fair return upon the fair value of its property, while the Commission argued that rates should be adjusted to cover costs, and that when all outstanding bonds had been retired, there existed no further justification for permitting rates which would yield more than the costs actually incurred in rendering the service.⁵⁰ Despite the reasonableness and soundness of this principle, the state courts reversed the Commission, holding that the statute required the Commission to treat private utilities and municipal utilities the same, allowing each "a reasonable average return upon capital actually expended."

The extent to which the same principles should control the establishment of rates to be charged by private utilities and by municipal utilities has long been a matter of debate. Clearly, the same controlling principles should prevail with respect to the *maximum* rates—the consumer should not be asked to pay an unreasonably high rate whatever the necessities of the enterprise that serves him, be it a private company or a municipal undertaking. On the other hand, to argue that precisely the same *items*, including even a reasonable return upon the fair value of the property, should be included in calculating the rates of private and public utilities is to ignore the distinctive circumstances surrounding the operations of each. Both enterprises should establish rates to cover costs, but the costs recovered should be the actual costs, not hypothetical or theoretical costs. Where consumers, through the rates paid, have amortized

⁴⁸ However, the progressively managed municipal utilities have followed an even more vigorous program of promotional rate reductions than have the privately owned utilities; in fact, the experience of the better municipal utilities demonstrates what can be accomplished by rate reductions planned to encourage large-scale consumption.

⁴⁹ *Customers v. Boonville*, 5 P.U.R. (N.S.) 298 (N.Y., 1934), 8 P.U.R. (N.S.) 493 (N.Y., 1935). The decisions of the Commission were appealed to the State courts, the decision of the Appellate Division being found in *Boonville v. Maltbie*, 245 App. Div. 468, 283 N.Y. Supp. 460 (1935), and that of the Court of Appeals, in 272 N.Y. 40, 4 N.E. (2d) 209 (1936).

⁵⁰ 8 P.U.R. (N.S.) 493, 497-498

a part of the capital cost of the enterprise, no justification exists for asking them to continue to pay a fair return upon that capital, and the equities of the case are not changed whether the utility is a private venture or a public undertaking. And simply because the legal rights of the private utility might permit it to continue to demand a fair return upon its property under such circumstances is certainly no justification for applying the same inequitable rule to the municipal enterprise.

Other regulation. Commission jurisdiction over the service standards of municipal utilities is as sketchy and incomplete as the authority which has been given with respect to rates and charges. Eighteen states have made statutory provision for the commission regulation of the service of municipal utilities.⁵¹

Commission jurisdiction over the accounting practices of municipal utilities is more firmly established, being primarily concerned with assuring adherence to a prescribed system of accounts and requiring certain reports from the municipal undertakings.⁵² Only a few states have given their commissions supervisory powers over the financial aspects of municipal utilities.⁵³ And only Wisconsin has made its commission responsible for controlling the appropriations and distribution of income by municipal utility enterprises.

RELATIONS WITH OTHER UTILITY UNDERTAKINGS. Utility undertakings, whether public or commercial, involve relatively heavy investments in capital equipment. A prerequisite of efficient and economical operation is, therefore, the attainment of relatively full utilization of that capacity, which can ordinarily be accomplished only if the utility is able to serve a relatively large market. The corporate limits of the municipality do not usually define the economical service area; to confine service to that restricted area may involve unnecessarily high unit costs, and may leave the surrounding territory without the possibility of an adequate and economical service. This situation can be partially improved by permitting two or more municipalities to undertake the joint operation of utility assets. Also, a majority of states now permit municipal utility undertakings to supply service outside the limits of the municipality.⁵⁴

THE SUCCESS OF MUNICIPAL ELECTRICAL UNDERTAKINGS. The success of mu-

⁵¹ California (limited), Connecticut, Maine, Maryland, Missouri, Montana, Nevada, New Jersey, New York, North Dakota, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, West Virginia, Wisconsin, and Wyoming.

⁵² Twenty-six states have such provisions—Arkansas, California, Connecticut, Indiana, Maine, Maryland, Massachusetts, Michigan, Missouri, Montana, Nevada, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Washington, West Virginia, Wisconsin, and Wyoming.

⁵³ California, Maryland, New Jersey, New York, North Dakota, Tennessee, Vermont, and Wisconsin.

⁵⁴ Alabama, Arizona, Arkansas (with the commission's approval), California, Colorado (waterworks), District of Columbia (waterworks), Florida, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Maryland (waterworks), Massachusetts, Michigan, Minnesota (with the voters' approval), Mississippi, Missouri, Montana (waterworks), Nebraska, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, Texas, Utah, Virginia (with the approval of the citizens), Washington, West Virginia, Wisconsin, and Wyoming.

In Kentucky, Maine, Nevada, New Hampshire, and Rhode Island operation outside the municipality is permitted only with a certificate of convenience and necessity. In Vermont such operations must be approved by the legislature.

municipal utilities is commonly judged by four criteria—the number and present significance of municipal undertakings, the rates charged by municipal utilities, their influence on the rate policies of private utilities, and the financial results achieved.

The number of public plants. If the success of municipal utility undertakings be judged in terms of the number of municipal plants which have been established, the number that have survived to the present time, and their present significance in terms of capacity, output, or number of customers served, the record of public ownership is not impressive. Yet further analysis will reveal that these statistics do not support a conclusion that public ownership of electrical utilities is a failure. The municipal undertaking, with certain notable exceptions, is characteristically a small-scale enterprise, and in the past the majority have been confined in their operations to a single municipality, or to the territory immediately adjacent thereto. The technological developments that swept most of the small privately owned plants of the country into large interconnected systems, left many of the small isolated municipal plants at a disadvantage in terms of cost, especially when they were unable to purchase their energy requirements at wholesale from large central stations. Recently, however, Diesel engine generators have made it possible for the small isolated plants to give relatively efficient and economical service even when judged by the attainments of the large interconnected system.

The statistical record of the decline in the number of municipal plants certainly records many instances of failure; perhaps an unduly low rate policy, a dissipation of utility revenues, or a failure to make proper provision for depreciation and replacements, presented the municipality with the alternative of making large expenditures to rehabilitate their electric property or of selling to a private company. But in other instances the disappearance of the municipal plant simply reflected the trend toward concentration, and was no indication that municipal operation had proved a failure.⁵⁵ During the past ten years the trend with respect to municipal ownership has been reversed, so that in 1940 more municipal plants were operating than in 1930, and they are serving a substantially larger proportion of the population.

The rates charged by municipal plants. By its proponents, the success of municipal ownership is commonly measured in terms of the lower rates which are said to be charged by publicly owned undertakings. Comparison of the prices charged by privately owned utilities and municipal utilities has been the very center of the public-ownership controversy. Recently the Federal Power Commission has published annually a compilation of typical net monthly bills for most communities, and this has provided a factual basis for rate comparison.⁵⁶ These surveys have revealed that there is no sharp cleavage in rate levels between publicly owned and privately owned electrical utili-

⁵⁵ It should also be noted that for many years the privately owned utility industry waged an intensive campaign to discourage the establishment of new municipal utilities and to bring about a liquidation of those which were already functioning. (Chapter XXIII.)

⁵⁶ See particularly the following publications of the Federal Power Commission: *The National Electric Rate Book, Typical Net Monthly Bills for Electric Service* (for each of the 48 states), *Rates, Taxes and Consumer Savings, Publicly and Privately Owned Electric Utilities, 1935-1937*; and *Comparative Rates of Publicly and Privately Owned Electric Utilities* (Rate Series No. 5, 1936).

ties. However, analyzing the communities which typically enjoy low rates for electric service, they are either communities served by a public plant or communities in which there is an element of competition, actual or threatened.⁵⁷

A simplified picture of the relative rates charged by private and public electric plants may be obtained by reference to Table 54, which presents average typical bills for 1937, for six classes of communities, based on their population. The sums shown are average typical bills for each category of service—residential, commercial lighting, commercial power, and industrial service.⁵⁸

Of the 18,689 communities for which these bills were compiled, 16,742 were served only by privately owned utilities, 1,858 were served only by publicly owned utilities, and 89 were served by both a privately owned and a publicly owned utility.⁵⁹

Considering first the average typical bill for residential electric service, it appears that the private company supplied service more cheaply in communities having a population of 2,500 or less, which would be expected where the small community was served by an interconnected system. However, except for consumptions of 250 kilowatt-hours in communities in the 2,500 to 9,999 class, the publicly owned utilities characteristically had lower rates than those charged by private companies; the amount by which the average bill for the private company exceeded the average bill for the publicly owned utility varied from 4 per cent to 31 per cent.

For commercial lighting, commercial power, and industrial service it appears that in every instance the average typical bill of the publicly owned sector of the industry was in 1937 less than the corresponding average typical bill for the privately owned sector of the industry.

A caution must be sounded against placing too great reliance on the average bills thus shown. Although these statistics were presented with respect to communities of different size and although the typical bills were selected with reference to consumptions which were characteristic of the various categories of consumers, the figures are averages presented on a nation-wide basis and are not necessarily typical of the situation which prevailed in any one section of the country or even less in any one community. A more accurate picture of the significance of the relative rates charged by privately owned and pub-

⁵⁷ Federal Power Commission, *Typical Electric Bills, Cities of 50,000 Population and More, 1940*. See Table 2, in which twenty cities of the twenty-five with lowest bills for consumptions of 100 kilowatt-hours or less, are cities falling within the above generalization.

⁵⁸ The Commission report states with respect to these bills: "The bills shown are average bills, weighted by the population in each community. These were computed for each community size group by multiplying the bill for each community by its population, and dividing the sum of these products by the sum of the populations of the communities included." (*Rates, Taxes, and Consumer Savings, Publicly and Privately Owned Electric Utilities, 1935-1937*, p. 3.)

⁵⁹ From a comparison of the distribution with respect to communities served by private and publicly owned electric utilities, it might appear that the privately owned companies are as characteristically small-scale units as are the publicly owned utilities. Such is, in fact, not the situation. The small communities served by private companies are typically served by a large interconnected system that supplies electric energy to scores, or even hundreds, of communities. Most of the publicly owned utilities are not yet interconnected, except where they take wholesale power from some large development such as the Tennessee Valley Authority or the Bonneville Power Administration.

TABLE
AVERAGE TYPICAL MONTHLY BILLS FOR PRIVATE

Community Size Group	Number of Communities ^a	Type of Ownership	Residential Service					
			25 kwh		100 kwh		250 kwh	
			Amount	Per cent ^b	Amount	Per cent ^b	Amount	Per cent ^b
50,000 and over	183	Private	\$1.45	131	\$4.11	127	\$7.54	120
	17	Public	1.11	100	3.24	100	6.28	100
10,000 to 49,999	706	Private	1.67	111	4.54	112	8.16	107
	118	Public	1.50	100	4.07	100	7.60	100
2,500 to 9,999	1,966	Private	1.78	106	4.73	104	8.28	98
	482	Public	1.68	100	4.55	100	8.42	100
1,000 to 2,499	3,328	Private	1.91	96	4.91	97	8.45	91
	594	Public	1.98	100	5.07	100	9.26	100
250 to 999	10,648	Private	2.04	95	5.11	89	8.68	78
	736	Public	2.14	100	5.74	100	11.14	100
Total	18,689							

Community Size Group	Number of Communities ^a	Type of Ownership	Commercial Power Service					
			3 kw & 375 kwh		12 kw & 1,500 kwh		30 kw & 6,000 kwh	
			Amount	Per cent ^b	Amount	Per cent ^b	Amount	Per cent ^b
50,000 and over	183	Private	\$16.07	151	\$58.16	158	\$177.87	162
	17	Public	10.61	100	36.85	100	110.13	100
10,000 to 49,999	706	Private	17.17	128	58.29	134	169.43	126
	118	Public	13.37	100	43.34	100	134.47	100
2,500 to 9,999	1,966	Private	17.28	120	58.51	124	171.34	111
	482	Public	14.41	100	47.26	100	153.96	100
1,000 to 2,499	3,328	Private						
	594	Public						
250 to 999	10,648	Private						
	736	Public						
Total	18,689							

* Source: Federal Power Commission, *Rates, Taxes, and Consumer Savings, Publicly and Privately Owned Electric Utilities, 1935-1937*, pp. 3-6.

^a The total, 18,689, is less than the sum of the number of communities because 89 communities have both private and public utility companies: in the largest class there are 9 communities

licly owned electric enterprises requires a consideration of particular communities.

Even where the validity of comparison between the rates charged by publicly owned and private utility companies is admitted, the conclusion that the rates charged by the public enterprises are lower than those charged by comparable private companies has been challenged.⁶⁰ Indeed, it is argued that the

⁶⁰ In Chapter XXIII, "Public Relations and Propaganda," the virulence of the attack on publicly operated electric plants was noted. The following excerpts from letters written by various utility representatives and officials, which found their way into the records of the Federal Trade Com-

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AND PUBLIC ELECTRIC COMPANIES, 1937

Commercial Light Service

0.75 kw & 50 kwh ¹		3 kw & 375 kwh		6 kw & 750 kwh	
Amount	Per cent ^b	Amount	Per cent ^b	Amount	Per cent ^b
\$2.85	140	\$17.55	135	\$34.57	144
2.03	100	12.99	100	24.00	100
3.31	117	19.71	120	36.84	123
2.82	100	16.46	100	29.85	100
3.49	108	19.99	111	36.85	114
3.23	100	17.97	100	32.30	100

Industrial Service

150 kw & 30,000 kwh			300 kw & 60,000 kwh			1,000 kw & 200,000 kwh		
Amount	Cents per kwh	Per cent ^b	Amount	Cents per kwh	Per cent ^b	Amount	Cents per kwh	Per cent ^b
\$580	1.93	137	\$1,032	1.72	133	\$2,980	1.49	133
424	1.41	100	775	1.29	100	2,246	1.12	100
592	1.97	113	1,067	1.78	108	3,105	1.55	102
522	1.74	100	989	1.65	100	3,039	1.52	100

with competing service, and 18, 28, 22, and 12, respectively, in the other size groups.

^b In each instance the bill of the publicly owned enterprise is used as the base and designated as 100.

¹ Kw is billing demand in kilowatts; kwh is monthly consumption in kilowatt hours.

differential in favor of the public plant is converted to a margin of advantage for the private company when all cost items are considered: the payment of taxes, the alleged failure of the public plant to make adequate provision for depreciation, the subsidies received by the public plant from public funds, and

mission's investigation, indicate what these utility men really thought of certain municipal plants when they were speaking "off the record."

From the assistant to the president of the Illinois Power & Light Corp. to the assistant director of the Illinois Information Committee:

"In addition we must face the cold fact in central Illinois that the most energetically operated

the lower interest charges that result from financing the public projects with government bonds. Each of these contentions must be weighed.

(1) The payments made by the publicly and privately owned utilities in support of the various grades of government constitute the most controversial factor in comparing rates. This matter has been investigated by the Federal Power Commission.⁶¹ The payments in support of government take several forms: the principal contributions are in the form of cash payments, which may be either tax payments or contributions; in addition, publicly owned utilities, and to a slight extent privately owned utilities, contribute a variety of "free services" in the form of street lighting, municipal pumping, lighting for public buildings, and signal lighting services.⁶² Expressing taxes, cash contributions, and free services as a percentage of gross revenues, the Commission reported that in 1936 the privately owned utilities paid 13.2 per cent of their gross revenues in the form of taxes and net cash contributions, and 0.0024 per cent in the form of free services, or a total of 13.2 per cent; while the publicly owned utilities paid 17.3 per cent of their gross revenues in the form of taxes and cash contributions, and in addition supplied free services amounting to 8.5 per cent, the total contribution to governmental units by the publicly owned utilities being 25.8 per cent.

More accurate comparisons may be obtained by making certain adjustments in gross revenues to allow for free services and the cost of energy purchased for resale, and calculating the payments as percentages of the "base revenues."⁶³ Carrying through these calculations on the basis of the "base revenues," the privately owned utilities paid 14.4 per cent of their revenues

and most energetically 'publicity-cated' municipal plant gives rates which are far below standard basis of operation.

"The less said on the high rates of municipal plants, within the territory conversant with the Springfield situation, at least, the better." (Federal Trade Commission, *Utility Corporations, Exs.*, No. 2, p. 484.)

From the director of the Missouri committee to a power company official:

"To sum up, I believe the Hannibal plant is as honest as any other municipal plant, and it does sell electricity at a very low rate. It is extremely desirable that the Hannibal plant should be removed from the field of comparison in Missouri." (*Ibid.*, *Exs.*, Nos. 5-6, p. 408.)

From a representative of a holding company to the director of the Michigan committee:

"The only real outstanding municipally owned plants in this State are Lansing and Holland—I mean that these are the ones generally referred to whenever the municipal ownership matter comes up in any locality. The less said about Holland the better. I have looked into that thing time and time again, and so have others. There are no 'bugs' in it. It is a successful municipally owned plant, and there is no use denying the fact." (*Ibid.*, *Exs.*, Nos. 5-6, p. 834.)

From the director of the Missouri committee to a power company executive:

"... Albany, with practically a new municipal plant, paying off engines can give about the same rate as a high-line company can give at Stanberry—that is, counting taxes paid into the water and light fund at Albany.

"When a little municipal plant can equal a big system in rates and service, we have no excuse for being in the business." (*Ibid.*, *Exs.*, Nos. 5-6, p. 434.)

⁶¹ *Rates, Taxes, and Consumer Savings, Publicly and Privately Owned Utilities, 1935-1937.*

⁶² When the term "free service" is applied to a publicly owned utility, "free service" means that the service is furnished by the utility at no charge or at rates lower than the average charge per kilowatt-hour for similar services furnished governments by privately owned utilities in the same state.

As applied to privately owned companies, "free service" means only that service which is furnished at no charge; undervalued services furnished by privately owned companies are not included "because the charges for such services are used in determining the average charge per kilowatt-hour for the state in placing a value on free services generally." (*Ibid.*, p. 39.)

⁶³ *Ibid.*, pp. 7-8.

for taxes and net cash contributions, while the publicly owned utilities paid 18 per cent of their base revenues; in addition, the publicly owned utilities furnished free services having an estimated value of 8.8 per cent of base revenues. Thus the total of taxes, net cash contributions, and free services, in relation to base revenues, was 14.4 per cent for the privately owned utilities and 26.8 per cent for the publicly owned utilities. It would thus appear that the lower rates of the publicly owned enterprises are not to be explained in terms of their exemption from taxation; they actually have made a greater contribution to governmental income than have the privately owned utilities.

(2) It has been said that municipal utilities are able to supply service at lower rates because they fail to make full allowance for all of their costs, specifically for depreciation. This criticism was doubtless valid as applied to some of the early municipal undertakings. But today a failure to make full provision for depreciation expense would be recognized by all advocates of public ownership as an economically unsound policy. A substantial proportion of municipally owned utility enterprises err in the opposite direction, for they not only make liberal provision for depreciation expense and build up substantial depreciation reserves, but also follow a policy of rapidly amortizing their investment.

(3) Where publicly owned utility enterprises have been subsidized by contributions from public funds, a new complication is introduced in making valid comparisons between public and private utilities. The question of comparability has nothing to do with such questions of public policy as to whether or not public projects should be supported by grants from public funds. But if any public undertaking does receive grants or subsidies from public funds, the amount of such contributions should be continued in the utility's investment account along with such funds as have been raised through the issuance of bonds until the investments, from both sources, have been amortized by payments made from the net earnings.

(4) The contention that rates of public enterprises may not be compared with rates charged by private companies because the superior credit position of the governmental unit permits capital to be raised at lower interest rates is not persuasive. The argument is that the utility undertaking as such would not be in a position to borrow at as low a rate of interest if it were deprived of the support of the government's credit, either in the form of municipal bonds or in the form of a governmental guarantee of the principal and interest of the bonds. This criticism loses much of its force in the light of recent developments, for it has become the fashion to finance publicly owned utility undertakings through the issuance of revenue bonds, which are a lien only on the earnings and assets of the utility undertaking and are not, therefore, government bonds in the usual sense of the term.⁶⁴

⁶⁴ There are many other aspects of the operation of privately and publicly owned utilities which are not comparable: the relatively high salaries paid by private companies, expenditures to develop a larger market for the utility service, the relatively larger investment in generating equipment, et cetera. There is no particular reason to single out differences in the costs of capital to the two types of enterprise as a basis for urging that rate comparisons are invalid. Each form of enterprise has its peculiar advantages, and a comparison of rates and charges is simply one way of focusing on the balance of advantage attaching to one or the other form of organizing utility services.

The financial record. The success of municipal undertakings may also be judged in terms of the financial income which these undertakings have produced. Of course, it is not the purpose of the publicly owned utility enterprises to make a profit, but it is expected that they will cover their costs, including capital costs as well as operation expenses. The record in this respect is somewhat mixed. Many small and obscure publicly owned undertakings have failed and disappeared from the scene. Other public undertakings have been such conspicuous financial successes that they have enjoyed a nation-wide reputation. Little can be gained from a computation of the number of plants which have been successful and the sums which they have earned. What is significant is the conclusion, fully supported by the evidence, that publicly owned and operated utility enterprises can be financially successful. The significant inquiry turns to the circumstances which make for the success or failure of publicly operated utility systems.

THE ADVANTAGES OF MUNICIPAL OWNERSHIP. Five principal advantages are said to be inherent in public, as contrasted with private, ownership and operation:

(1) The elimination of conflicts of interest between the owners and managers of the utility company and the consumers appears as an obvious advantage. Where any essential service is supplied under monopoly conditions, the interest of the business unit in maximizing its net profits will always be in conflict with the consumers' interest in having the service supplied as abundantly as possible and at the lowest feasible rate. Regulation is greatly simplified: rates can be fixed simply and promptly to yield the cost of the service; prolonged investigations are not necessary to determine the present fair value of the property or the reasonable rate of return; and orders fixing rates (whether issued by the municipal council or by the state public service commission) become effective without delays arising from appeals to the courts.

(2) Rates of the municipal undertaking are, or should be, based upon the actual cost of the service, including in cost the actual sums which the public undertaking must pay as interest and as amortization of its outstanding indebtedness. Any reduction in the cost of service redounds to the benefit of consumers in the form of rate reduction.

(3) The price policy normally adopted by municipal undertakings is perhaps the basic advantage for the consumer. In the earlier discussion of utility pricing policies, the contrast between private and public pricing policies was brought out.⁶⁵ It was there noted that in the absence of regulation, the private monopoly finds it advantageous to price its service so that each additional unit of service sold adds more to the net income of the corporation than it adds to its cost; in the language of economics, the monopoly finds it advantageous to expand its output only so long as the *marginal revenue* is in excess of the *marginal cost*. In contrast, the publicly owned plant which seeks to cover cost only, will expand output as long as the price is in excess of the unit costs; that is, the output will be expanded as long as the *price* per unit is not less than the *average cost* per unit. The contrasting price policies have a significant effect

⁶⁵ Chapter X.

both upon the output that each type of utility enterprise will seek to sell under given conditions of demand and with the existing investment, and also upon the amount of investment which will appear desirable. The publicly owned plant will be prepared to undertake the production of a larger volume of service at a lower price per unit; and the publicly owned plant will find it justifiable to create a larger plant capacity than would appear to be consistent with maximizing the net income for a similarly situated private company.⁶⁶

(4) Lower costs of operation are said to be a basic advantage arising out of public ownership and operation. These lower costs may prevail both with respect to operating expenses and capital charges. The lower operating expenses, if achieved, are presumably the result of eliminating elements of intercompany profits, smaller expenditures in developing the market (because the lower rates encourage consumers to expand their use of the service without the necessity of a more aggressive selling campaign), and the lower salaries that are ordinarily paid in public undertakings. The lower capital costs may be expected from four conditions: public bodies are ordinarily able to borrow at lower rates of interest than must be paid on corporate issues; the entire capital is usually raised through the sale of bonds; publicly owned plants characteristically have a lower capitalization, since there is and has been no incentive to maintain a high capitalization either to cover the profits of the promoters and construction companies or to justify a larger rate base; and finally, public enterprises amortize bonded indebtedness out of any excess earnings that are available.

(5) The most important advantage claimed for public ownership centers in the salutary effects that such operations may have upon privately owned and operated utilities. Publicly operated utilities may influence the policies of private companies through direct competition with the private company, through creating a yardstick by which the reasonableness of the charges of the privately owned company may be judged, and through demonstrating the elasticity of the demand for the utility service and the possibilities of large increases in sales from promotional reductions in rates.

The competition between publicly owned and operated enterprises and privately owned companies has only recently been accepted as a sound element in a regulatory program. The change in attitude since the 1920's is a result of dissatisfaction with the effects of commission regulation, and the publicity given to the malpractices associated with the holding-company systems. Furthermore, it has been demonstrated that direct competition by a public plant may be more effective than regulation in persuading the privately managed company to adopt a program of rate reductions, and that such rate reductions do not necessarily mean financial disaster but may lead to such an expansion of consumption that increased prosperity results for the competing enterprises.⁶⁷

⁶⁶ If it should appear desirable to adopt the increment-cost theory of pricing utility service, the program would be more feasible for a publicly owned project. (Chapter XVII.) See also Montgomery, "Government Ownership and Operation of the Electric Industry," 201 *Annals of the American Academy of Political and Social Science* 43, 48 (Jan., 1939).

⁶⁷ This is not to say that cutthroat competition may not lead to financial disaster for both utility enterprises. But regulation can prevent rate reductions that result in pricing the utility

The effectiveness of public competition as a means of bringing about a reduction in utility rates has been amply demonstrated by the experience of those communities that have been served by competing plants. Los Angeles, Seattle, Cleveland, Columbus, Lincoln, Fort Wayne, Jamestown (New York), and Kalamazoo are widely publicized instances where competition has been tried, and in each instance the rates have been distinctly lower than the rates charged in similar communities where private companies were not under pressure to meet a competitive standard.

It is highly significant that the existence of competition has not meant the financial ruin of the private company.⁶⁸ The Cleveland Electric Illuminating Company and the former Los Angeles Gas and Electric Corporation operated successfully in competition with public plants. The experience of two Canadian communities where public competition has forced the private companies to follow a policy of progressive rate reduction is pertinent. For more than twenty years, the Ottawa Electric Company has continued to operate successfully in a territory dominated by the Ontario Hydro-Electric Commission. When the Ontario Hydro-Electric Commission was established, the Ottawa Electric Company did not sell out as did most of the private utilities. It took the initiative in reducing rates, and after twenty years it still had more domestic and commercial customers than the Hydro-Electric Commission.⁶⁹

A dramatic instance of the success of public competition in reducing rates is provided by the experience of Montreal with the small public plant operated by the municipality of Westmount. Westmount is situated wholly within the boundaries of the city of Montreal and has a population of 26,000, while greater Montreal has a population of over 1,250,000. In 1906, when the Westmount municipal plant began business, the Montreal Light, Heat and Power Company was charging 12 $\frac{3}{4}$ cents per kilowatt-hour; the municipal plant began with a price of 10 cents. There followed years of intensive competition during which the private company was again and again compelled to meet the rates established by the small municipal enterprise; every conceivable effort was made by the private company to drive the municipal plant out of business, all without success. After more than twenty-five years, the rates charged by the Westmount plant had fallen to 2 $\frac{1}{2}$ cents per kilowatt-hour, while those of the Montreal Light, Heat and Power Company were 3 cents; the company always followed, and never led, the public plant in these rate reductions. But the really interesting part of the story is the extraordinary financial success of the private company, whose rate of return on its total assets never fell below 6 per cent after the establishment of public competition. Indeed, with very few interruptions, its net revenue increased every year un-

service below cost and so prevent an impairment in the credit of the utility or a deterioration in its service standards, provided the community is large enough to support the investment in two plants. It is still true, however, that competition involves a measure of wasteful duplication of facilities, but the costs involved in such duplication may be less serious for the community than a failure to keep rates down to the minimum necessary to cover costs and a fair return.

⁶⁸ In most instances, the private company has been operating in a larger area than that served by the competing municipal plant.

⁶⁹ In 1935 the Ottawa Electric Company had earnings after depreciation of over 9 per cent on the book value of its property. (McDiarmid, "An Institutional Investor Scans the Utility Horizon," 20 *Public Utilities Fortnightly* 451 [1937].)

til the depression year of 1931. The history of this competition clearly demonstrates that the low rates forced by public competition do not necessarily destroy any honest investment in the utility undertaking; that, on the contrary, rate reductions result in such an increase in the demand for the utility service that larger earnings accrue than under the previous higher rates.⁷⁰

The salutary effects that follow from the establishment of public plants are not dependent upon direct competition with private plants, but follow from the example set by the public plant. Thus competitive emulation, rather than direct competition in the same market, is said to create a yardstick by which the reasonableness of the rates of private plants can be judged. Similarly, the publication of electric rate schedules by the Federal Power Commission, and particularly its publication of typical bills for electric service in various communities has influenced companies charging high rates to meet the lower charges established by comparable plants, whether privately or publicly owned.

THE WEAKNESSES OF PUBLIC OWNERSHIP. The weaknesses of public ownership in the utility field have been given much publicity. Each of these doubtless has weight and validity as applied to particular situations, but it would be a mistake to assume that these weaknesses are inherent in all public ownership and operation.

(1) In general, publicly owned plants are smaller in size than the privately owned companies. And of course, unit costs are to some extent a function of the size of the plant and of the degree to which its capacity is used. If they are unable to expand sufficiently to assure obtaining the economies potential in the modern technology, publicly owned plants must be at a handicap in comparison with privately owned plants, and must be correspondingly less qualified to give the best service at the lowest rate. Where the publicly owned plant operates as an isolated unit, generating the power which it distributes, it is not only unable to obtain the economies implicit in large central-station generation, but it is also unable to achieve those economies of diversity which are experienced by the large interconnected system.

There are several alternatives by which the public plant can overcome the disadvantages inherent in small-scale operation. First, legislation may permit the municipal plant to operate outside the municipality, thereby enabling it to develop to a larger and more economical size and to attain a more diversified demand for its service. Also, the municipal plant may bring adequate service to outlying districts that might not otherwise be able to obtain it. Secondly, the disadvantages of size are of chief significance where the public units seek to perform the complete utility service, both generating and distributing energy. To an increasing extent, the municipal utility and other public enterprises have found it advantageous to confine their operations to distribution, purchasing their power wholesale.⁷¹

(2) The management of publicly owned utility undertakings has been a

⁷⁰ *The Effect of Public Competition on the Rates Charged by the Montreal Light, Heat & Power Company*, 4 Ann. Rep. N.Y. Power Authority 90-103 (1934). This report is also published in Barnes, *Cases on Public Utilities Regulation*, at page 950.

⁷¹ The development of important federal hydroelectric projects, notably the Tennessee Valley Authority, the Bonneville Power Administration, and the Boulder Dam Development, have assured public plants in those regions an abundant supply of inexpensive power and have correspondingly stimulated the establishment of public plants.

source of weakness. Many municipal electric projects are controlled and managed directly by municipal officials who give only a part of their time and attention to its affairs and who are not likely to be expert in utility matters. Furthermore, political considerations sometimes influence their decisions with respect to questions of policy and of administration.

Political management is not, however, an inevitable part of public ownership. A number of states require that all public undertakings shall be managed by an independent board of trustees, that a clear distinction shall be maintained between the operation of the utility and other municipal activities, and that the revenues from the utility undertaking shall be applied only to the utility service.

(3) The lack of the incentives associated with the profit motive are said to mitigate against the attainment of efficient management of the publicly owned projects. The significance of this criticism can be much overestimated. The managements of private companies are salaried workers who usually have no share in any profits of the corporation and yet they are expected to do an honest and efficient job. Pride of accomplishment and self-respect are just as real incentives for the efficient performance of one's responsibilities as a larger pecuniary reward; and the managements of the publicly owned enterprises have given ample evidence that they are responsive to these incentives.

(4) The personnel policy of publicly owned enterprises is said to constitute a serious handicap to the attainment of efficiency and progress. The specific criticism refers to the lower salary scales that commonly prevail in public office, and from this it is argued that the publicly owned undertaking will experience difficulty in securing and retaining the services of those most competent in their respective fields. This is a serious, and often a valid, criticism, not simply of publicly owned utility enterprises, but of governmental positions generally. The answer is patent—the community should be willing to pay its public servants on a scale commensurate with the abilities and responsibilities which the public service demands.

(5) The relations that have too often prevailed between the municipality and the publicly owned utility have been open to criticism. Frequently there has been no distinction between the utility undertaking and other departments of the municipal government; revenues from the utility service have been mingled with the general funds of the municipality; where the utility service has been successful, the surplus earnings from utility operations have been absorbed by the city treasury and applied to general municipal purposes; and where the undertaking has not been prosperous, the public treasury has shifted the losses to the shoulders of the taxpayers.

(6) Publicly owned utilities have not commonly been subject to the full jurisdiction of the regulatory authorities. A number of the practices of public plants that have been criticized can be traced to an absence of regulatory control and could be rectified if those who manage the public undertaking had the advice and counsel that the regulatory authorities could provide. In particular, the instances of incomplete and inaccurate accounting, inadequate provision for depreciation, the failure to adjust rates accurately to the cost of

services, and the application of revenues to non-utility purposes, could all be avoided if the public enterprise were required to conform to the standards which regulatory authorities should establish for the private sector of the industry.

THE REQUISITES FOR THE SUCCESSFUL OPERATION OF PUBLICLY OWNED UTILITY ENTERPRISES. The foregoing review of the advantages and weaknesses of publicly owned undertakings supplies the clues to specifications for the success of public enterprises.

The scope of the enterprise. Publicly owned utility enterprises should be authorized to expand the territorial limits of their service area to obtain maximum efficiency and lowest unit cost, and also to bring an economical service to any neighboring communities that might not otherwise be satisfactorily served. In many instances, economical operation by public undertakings will require provision for the establishment of "public utility districts" embracing many municipalities.

Independent nonpolitical management. Both the determination of matters of policy and the administration and operation of the public undertaking should be delegated to a nonpolitical board of trustees. The managers of the utility undertaking should be able to devote full time and attention to the efficient discharge of their responsibilities.

Central-station generation of electric energy. The development of a grid system connecting all generating facilities regionally and permitting the purchase at wholesale rates of such power as distributing companies might require would permit a more efficient organization of electric service, whether the distribution was by private companies or by municipal undertakings.

Financing. Of the two methods of financing municipal enterprises, municipal bonds or revenue bonds, the latter is preferable, not simply because of the increased independence of the utility undertaking, but also because the expansion of the utility plant can be determined by economic rather than political considerations. A public electric authority should be as well able to meet its capital requirements through the issuance of its own securities as a private corporation.

Administration of income. The statutory provisions regarding public undertakings should stipulate that the revenues from the utility service be applied only to paying the operating expenses of that service, adequate provision for depreciation, a sum equivalent to the taxes that would be paid by a comparable private company, and the retirement of outstanding indebtedness; all funds not required for these purposes should be applied to rate reductions and it should be provided that rates should be periodically readjusted so as to cover simply the costs of the service.

Regulation. It is desirable that publicly owned utilities should be subject to the supervision of regulatory authorities. The public project should be required to conform to accounting standards comparable to those imposed upon the private utilities. It should be the responsibility of regulatory authorities to handle all complaints with respect to discrimination in rates or service. It is probably desirable that the permission of the commission should be prerequi-

situ to the establishment of rates which are less than the cost of the service. The supervision of the security issues of the public electric unit would provide the occasion for council and advice.

4. UTILITY DISTRICTS

INTRODUCTORY. A relatively recent form of public ownership and operation of utility facilities is the utility district. The utility district makes possible the development of public ownership on a scale which permits the economies associated with large-scale operations, allows the inclusion in a single district of one, or more, municipalities with as much territory as falls within a natural service area, and affords an opportunity to bring utility service to territories that could not be reached by conventional municipal ownership. Though the establishment of utility districts is so recent that it is impossible to foresee how extensive their development may be, proponents of this form of organization contemplate the possibility of interdistrict mergers creating systems comparable in size to private utility corporations. Table 50 indicates the relative magnitude of the public-utility-district development.

Some ten states have made statutory provision for the establishment of utility districts.⁷² In general, these laws provide that utility districts may operate as utilities for the production, transmission, and distribution of electric energy; in some states provision is made for additional functions, such as supplying water, operating irrigation systems, supplying heat, transportation, telephone service, et cetera. The development of public utility districts has been most marked in states where a liberal legislative attitude, as represented by the passage of enabling statutes, has been combined with cheap sources of wholesale power; namely, Tennessee, Mississippi, Oregon, and Washington.

LEGAL POWERS. Utility districts are organized legally as quasi-municipal corporations; that is, they are instrumentalities of the state existing for the performance of public functions and enjoying certain of the powers of government.⁷³ They are managed by boards of directors, and possess the usual corporate powers to acquire and hold property, to make contracts, and to manage their property. They may exercise the power of eminent domain. They are empowered to issue bonds, and, in some instances, to levy and collect taxes.

THE FORMATION OF UTILITY DISTRICTS. The statutory provisions with respect

⁷² Alabama, *Laws*, 1935, No. 42; California, *Deering's General Laws* (1937), Acts 6390-6393; Mississippi, *Laws*, 1936, C. 187; Nebraska, *Compiled Statutes Supp.* (1937), C. 70, Art. 7; Nevada, *Laws*, 1935, C. 72; South Dakota, *Laws*, 1935, C. 162; Tennessee, *Laws*, 1935, C. 4; Washington, *Remington's Revised Statutes* (1933), Title 84, C. 3; Wisconsin, *Statutes*, 1937, C. 198.

The provision for "people's utility districts" in Oregon is found in the Constitution, Art. 11, Section 11. Oregon, *Laws*, 1931, C. 279; *Laws*, 1933, C. 272; *Laws*, 1937, C. 276; *Laws*, 1939, C. 387. See Brown, "People's Utility Districts in Oregon," 20 *Oregon Law Review* 3, 7-8 (1940).

⁷³ *In Re Bonds of Orosi Public Utility District*, 196 Cal. 43, 235 Pac. 1004 (1925); *Hillier v. Public Utility District No. 3*, 188 Wash. 602, 63 P. (2d) 392 (1936); *Pacific Gas & Electric Co. v. Sacramento Municipal Utility District*, 92 F. (2d) 365 (C.C.A., 9th, 1937); *Public Utility District No. 1 v. Superior Court*, 199 Wash. 146, 90 P. (2d) 737 (1939); *In Re People's Utility District*, 160 Or. 530, 86 P. (2d) 460 (1939).

to the formation of utility districts are quite detailed and complicated. The enterprise may be launched in several ways: a petition signed by a specified percentage of the qualified voters of the district; a resolution or petition adopted by the governing body of a municipality; or the action of a designated board or commission. In general, some administrative body is required to make an investigation, and to hold hearings relative to the formation of that district.⁷⁴ The state laws differ with respect to the ultimate decision as to whether the utility district shall be formed: some place responsibility for the decision in an administrative commission,⁷⁵ while other states provide that the final determination shall be by an election held for the purpose.⁷⁶

The interpretation of the election returns usually rests with a commission. If there is a majority vote for the utility district in each municipality and in each distinct territorial unit, the district is formed as planned. But if certain of the municipalities or sections vote against the formation of the district, some states permit the formation of a district omitting those territories that voted against the plan.⁷⁷ In some jurisdictions, the commission that is required to investigate and report on the proposed district is authorized to make such modifications in the boundaries of the district as appear to be in the public interest.⁷⁸

THE FINANCING OF UTILITY DISTRICTS. The provisions made for the financing of utility districts are crucial in determining, first, whether such utility districts shall be established at all, and secondly, whether these districts can be successful. These undertakings may be financed by the issuance of either revenue bonds or general-obligation bonds. Unless the district has been given the power to tax, it is, of course, unable to issue general-obligation bonds.⁷⁹ Where provision is made for the issue of general-obligation bonds, there is usually a statutory limit placed upon the aggregate bond issue that may be sold; for example, in Oregon such issue is limited to 10 per cent of the assessed valuation of all property within the limits of the district.⁸⁰ And there is also a limit on the tax rate that may be imposed.

MANAGEMENT. The management of utility districts is characteristically lodged in a board of directors, who may be either elected by the qualified voters of the district or appointed by an executive official.⁸¹ The board of directors is commonly expected to serve as its own business manager and actively conduct the business of the district. In some states, however, provision is made for the appointment of a manager, selected on the basis of his technical competence.⁸² The number of directors on the board vary from three to

⁷⁴ For example in Oregon, the Hydro-Electric Commission is required to make a preliminary investigation and to report on the feasibility of the proposed utility district. 5th *Ann. Rep. Hydro-Electric Commission of Oregon* (1935-1936), p. 11.

⁷⁵ Alabama, Nevada, South Dakota, and Tennessee.

⁷⁶ California, Mississippi, Oregon, Washington, and Wisconsin.

⁷⁷ Mississippi, Oregon, and Wisconsin.

⁷⁸ California, Oregon, and Washington.

⁷⁹ In Mississippi, Nebraska, Nevada, South Dakota, and Tennessee, utility districts have not been given the power to tax, and therefore, may not issue general-obligation bonds.

⁸⁰ Oregon, *Code*, 1930 (*Supp.* 1935), Sec. 56-3443, amended *Laws*, 1939, C. 387, Sec. 7.

⁸¹ Five states provide for appointment of directors: Alabama, Mississippi, Nevada, South Dakota, and Tennessee.

⁸² California, Mississippi, Washington, and Wisconsin.

twenty-one, with boards of three and five members being representative. The usual term of office is four years.

The board of directors exercises all of the powers customarily wielded by the directors of a corporation. They negotiate contracts, hire labor, and establish rates. The purpose of the utility district is to supply satisfactory service as cheaply as possible, but the directors are under an obligation to establish rates to yield revenues sufficient to cover all costs of operation and maintenance, to pay taxes that may be levied against the property, and to pay interest on bonds and provide for their amortization.⁸³

The provisions with respect to the issuance of bonds vary in the different states; except in Wisconsin, those states where utility districts have the power to tax require that bond issues of utility districts be authorized by the voters;⁸⁴ while in other states the power to issue bonds is vested in the board of directors.⁸⁵

ACHIEVEMENTS OF THE PUBLIC UTILITY DISTRICTS. The public utility district is too recent a development to make possible any expression of opinion as to its success. The Bonneville development on the Columbia River, which has made available hydroelectric power at the lowest wholesale rates in the country, has given a marked impetus to the establishment of utility districts in the Pacific Northwest. As of July, 1939, twenty-five districts had been established in Washington and five districts in Oregon.⁸⁶ All of these districts encountered serious difficulties in getting started, largely due to the opposition of private utilities. Elections for public utility districts have been characterized by bitter opposition from "taxpayers' leagues" and "voters' leagues" subsidized by the utilities. Court injunctions in taxpayer suits and other litigation have sought to prevent their establishment and subsequent acquisition of property or issuance of securities.⁸⁷

As of the end of 1940, the Bonneville Power Administration reported contracts with nine public utility districts, and four were already taking Bonneville power.⁸⁸

⁸³ The statutes of Mississippi, Oregon, and Wisconsin provide that the property of utility districts shall be taxed in the same manner as similar property belonging to a private utility.

⁸⁴ California requires a two-thirds affirmative vote; Washington a three-fifths vote; Oregon a majority vote.

⁸⁵ Alabama, Mississippi, Nebraska, Nevada, South Dakota, Tennessee, and Wisconsin.

⁸⁶ 2 *Ann. Rep. Bonneville Power Administration* 8-9 (1939).

⁸⁷ The decision of the Washington Supreme Court in *Bayha v. Public Utility District No. 1 of Grays Harbor County*, 2 Wash. (2d) 85, 97 P. (2d) 614 (1939), upholding the right of the district to acquire the properties of private utility companies and to finance the acquisition by the issuance of revenue bonds without a specific vote of the people of the district, has cleared the way for public utility districts to begin operations.

Serious delay has been encountered in negotiating for the acquisition of existing electric systems, partly as a result of claims for high severance damages when a district seeks to acquire only a part of the property of the private utility company, and partly as a result of other difficulties when the districts act individually to acquire properties by negotiation or condemnation. Many of these difficulties could be removed if machinery were created whereby existing electric facilities could be acquired on a system-wide basis. A pending bill to reconstitute the Bonneville Power Administration makes provision for co-operative action by the Administration and other public bodies in negotiating system-wide acquisitions of private utility properties.

⁸⁸ These districts, in the order in which contracts for Bonneville power were signed, were: Skamania, Wash., Pacific, Wash., Wahiakum, Wash., Klickitat, Wash., Tillamook, Ore., Kittitas, Wash., Lewis, Wash., Northern Wasco, Ore., and Grays Harbor, Wash. See Bonneville Power Administration, *Report on Power Sales Progress*, Dec. 21, 1940.

5. THE RURAL ELECTRIFICATION ADMINISTRATION AND ELECTRIC POWER CO-OPERATIVES

THE PROBLEM OF RURAL ELECTRIFICATION. In 1923, only 2.6 per cent of American farms had electric service, and as of January 1, 1935, only 744,000, or 10.9 per cent of the total, were receiving service, and six million farms were still unserved. This situation prevailed despite the fact that for more than fifteen years farm organizations had pressed ceaselessly for an extension of electric service.

Many circumstances account for the relative failure of the private electric industry to serve the rural consumer. First, there was no incentive to build rural lines when all of the capital that flowed into the industry could be readily absorbed in the development of more profitable markets. Secondly, the utilities were unable to provide service except at excessive costs, which made it difficult, if not impossible, for farmers to use the service. Despite the success of the Ontario Hydro-Electric Commission in bringing cheap service to rural communities and building large loads, the private industry was not convinced that the farmer could become a paying customer even if rates could be sufficiently reduced, and furthermore, it lacked the ingenuity to devise cheap and effective ways of making low-cost power available.⁸⁹ Thirdly, where the private utilities did undertake to serve rural areas they followed a policy of selective building or "cream skimming," that is, lines were extended only into the more profitable parts of the territory, leaving the less promising areas unserved and practically unservable.

Rural electrification has profound social and economic significance. Indeed, it has brought a veritable revolution both in farm operations and in home life. For the first time, thousands of farm homes have adequate lighting. The farmer's wife has been able to enjoy those conveniences of modern living which are associated with electric refrigeration, electric cooking, and a host of appliances including washing machines, irons, toasters, percolators, radios, heaters, et cetera. Farming operations have also been correspondingly benefited. The use of electric lights has given the farmer better illumination in his barn and other buildings, extended the working day for farmer and his livestock, reduced fire hazards, and made available convenient and inexpensive power for a myriad of operations. Electric power has meant not only more convenient and gracious living for the farmer and his wife but also new opportunities to reduce the cost of farm operations and to add to the farmer's income. It has been calculated that there are over two hundred uses for electric power on the farm.

ESTABLISHMENT OF THE RURAL ELECTRIFICATION ADMINISTRATION. The Rural Electrification Administration was created by executive order on May 11, 1935.⁹⁰ A year later, on May 20, 1936, the Rural Electrification Act of 1936

⁸⁹ A part of the inability of the industry to perform this essential function was attributable to unduly high standards of construction, the use of expensive equipment, and building by piecemeal methods.

⁹⁰ Executive Order No. 7037, under authority of the Emergency Relief Appropriation Act of 1935. 74 Cong.; Public Res. No. 11, 49 Stat. 115.

was approved, giving permanent status to the Administration.⁹¹ On July 1, 1939, under the terms of Reorganization Plan No. II, it became an Administration within the Department of Agriculture.

The Administration is organized around the office of the Administrator, by whom all powers granted in the Act are exercised, who is appointed by the President, with the confirmation of the Senate. It is authorized to make loans for the entire cost of building rural electric-distribution systems, and where necessary may make loans also for generation and transmission equipment. These loans are limited to twenty-five years and must be self-liquidating within that period. Loans may also be made for wiring the premises of persons in rural areas and for the acquisition and installation of electrical and plumbing equipment. The statute permits loans to persons, corporations, states, territories, and subdivisions and agencies thereof, municipalities, public utility districts, and co-operative nonprofit or limited dividend associations. In making loans, preference must be given to public bodies and to nonprofit organizations or companies. Before any loan may be made, the administrator must find and certify that in his judgment the loan is reasonably secured and that it will be repaid within the time agreed. The interest rate on such loans must be the average rate paid by the United States on its obligations having a term of more than ten years.⁹² Half of the money available each year must be allotted among the states in the proportion which the number of farms not receiving electric service in the state bears to the total number of farms in the country not receiving service. The other half is available for loans without allotment, except that not more than 10 per cent may be loaned in any one state or in all the territories.

The Act of 1936 provided for a ten-year program. A maximum of \$50,000,000 from Reconstruction Finance Corporation funds was made available for the fiscal year ending June 30, 1937. Congress was authorized to appropriate from general treasury funds \$40,000,000 for loans during each of the nine succeeding fiscal years. For the fiscal year ending June 30, 1938, Congress appropriated \$30,000,000; for the fiscal year ending June 30, 1939, \$40,000,000 was appropriated, and in addition, the Reconstruction Finance Corporation was directed to make loans to the Administrator, as approved by the President, not exceeding \$100,000,000 dollars for rural electrification; and for the fiscal year ending June 30, 1940, Congress appropriated \$40,000,000.⁹³ Up to June 30, 1939, the Administration had made allotments or loans totalling \$223,903,830.⁹⁴

THE PRINCIPLES OF THE PROGRAM. Four fundamental principles underlie the work of the Administration. First, it is strictly a lending institution, with authority to make loans only when the Administrator finds that the loans will be properly secured and self-liquidating. Secondly, the program is providing regional electric service; it is expected that the more populous and richer areas, by

⁹¹ 74 Cong., Public Act No. 605; 49 Stat. 1363.

⁹² The interest rates on loans have been as follows: 1936, 3 per cent; 1937, 2.77 per cent; 1938, 2.88 per cent; 1939, 2.73 per cent; 1940, 2.69 per cent; and 1941, 2.46 per cent. (Slattery, *Rural America Lights Up*, p. 33.)

⁹³ Office of Government Reports, *United States Government Manual* (Feb., 1940), p. 174.

⁹⁴ 1939 *Report of Rural Electrification Administration*, pp. 350-351.

their larger consumptions, will help to carry the poorer or thinner parts of the territory. Thirdly, although loans are authorized to private companies and governmental units, the funds have gone almost entirely to farmers' co-operatives. Fourthly, it has been essential to reduce costs to the absolute minimum consonant with safety and satisfactory service.

THE CO-OPERATIVES. Organization. The Administration stands ready to supply counsel and assistance to any group of farmers seeking to establish a power co-operative. After the preliminary steps of organizing an incorporation committee and preparing the necessary articles of incorporation, there is a survey which attempts to accomplish three essentials—obtaining the signatures of members, the payment of membership fees (usually five dollars), and the signing of agreements to purchase a minimum amount of electricity; securing easements for a right-of-way for the co-operative's lines; and collecting data for the project map.

The loan or allotment. Field investigators of the Administration make careful surveys before a loan is allotted to the co-operative. There are inquiries into—the number of members, the income level of the farmers in the district and the prospective amounts of energy which will be consumed; compliance with any local laws with respect to co-operatives or utility service; the location of the project lines and an estimate of the cost of construction; and the sources from which a wholesale supply of power can be obtained and the reasonableness of its cost. If the allotment is approved, the legal division prepares a loan contract which must be signed by the trustees of the project. The loan is secured by a mortgage on the property of the co-operative; it is not a mortgage on the real or personal property of the members of the co-operative, who risk nothing more than the loss of their membership fee. As previously noted, loans for a period of twenty-five years are made at low interest rates, that is, at interest rates equal to the cost of long-term funds to the United States Government.⁹⁵

Construction. The construction takes place under the supervision of the engineers of the Administration. The specifications are prepared by the Administration and bids for the construction of the line must be approved before acceptance by the co-operative. Field auditors carefully check the use of funds and assure that proper accounting standards are observed. Arrangements are commonly made for the wholesale wiring of the farmers' premises so that the farmers are in a position to begin using electric power as soon as the line is energized.

Operations. An elected board of trustees is the policy-making body of the co-operative. The selection of a manager who is competent, honest, and an enthusiast for the co-operative movement is the most critical task that confronts the board. A most significant contribution of the Administration to the success of the co-operative is assistance in the selection of a properly qualified manager.⁹⁶

⁹⁵ Where loans are made on equipment and appliances, the term of the loan is limited to two-thirds of the assured life of the appliances, with a maximum of five years. These loans are not made to individual consumers or members of the co-operative, but to the co-operative, which in turn lends to the individual member.

⁹⁶ By serving as a central clearing house for the experience of all co-operatives, the Admin-

The manager must be technically expert in the operation of a high-voltage electrical distribution system. He must be a good business executive, directing the purchases of the system, and aiding the members in purchasing their equipment. He must keep records and make regular reports to the Rural Electrification Administration. He must be a competent commercial man with an understanding of the promotional aspects of rates and the feasible means of building a paying load. He must be a good superintendent of labor, able to select properly qualified workers and inspire in them a proper sense of responsibility. He must cultivate good public relations, and win and retain the confidence of his members. He must understand the legal rights and responsibilities of the co-operative. And, finally, he must be a person of absolute integrity with a high sense of loyalty to the co-operative.

Legal status of co-operatives. Serious legal obstacles have beset the growth of the electric co-operative movement. At the beginning of the program, most states had no specific legislation for the formation of electrical co-operatives. The problem was further complicated by suits brought by private companies to enjoin the erection of co-operatives and by adverse decisions by some public service commissions. Difficulties were encountered in the acquisition of rights-of-way—a serious problem in view of the large-scale operations, the fact that the co-operatives are without the power of eminent domain, and that economy in construction requires straight-line lay-outs and the avoidance of expense in securing rights-of-way. The Administration has contributed to the legal security of the co-operatives by urging the states to enact uniform electric co-operative acts and by defending the co-operatives in the courts.

As of 1940, the electric co-operatives had an assured legal position in twenty-three states; their status was somewhat ambiguous in twenty-one; and in four states legal obstacles still prevented the formation of co-operatives. Some fifteen states had adopted the Rural Electrification Administration's uniform electric co-operative act,⁹⁷ while five other states still provided for the formation of electric co-operatives under an earlier Public Works Administration act.⁹⁸ Earlier general laws pertaining to co-operatives permitted their establishment in three other states.⁹⁹ Of the remaining states, twenty-one states had laws pertaining to general co-operative or nonprofit associations which were not specifically drafted for rural electrification but which were presumably available for the organization of electric co-operatives. Power co-operatives had been established in all but the four states where legal obstacles existed.¹⁰⁰

The question whether electric co-operatives should come under the jurisdic-

istration is ready to give advice and assistance on every sort of question which may be presented. Also, it is in a position to create a career for managers of co-operative projects, giving them training on small projects and helping them to transfer to larger undertakings as their experience and competence fits them for larger responsibilities.

⁹⁷ Alabama, Arkansas, Florida, Georgia, Louisiana, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, Pennsylvania, South Carolina, Tennessee, and Texas.

⁹⁸ Indiana, Kentucky, Mississippi, North Carolina, and Virginia.

⁹⁹ Illinois, Iowa, and New Hampshire.

¹⁰⁰ In the case of New York and Rhode Island, it is doubtful whether the law permits the organization of electric co-operatives. In Connecticut, it is said that no new electric concern, private or public, may be launched except by an act of the legislature. In Massachusetts, the co-operatives have been shut out by adverse commission decisions. (Slattery, *op. cit.*, pp. 46-47.)

tion of state commissions has received considerable attention. In the uniform laws, sponsored by the Rural Electrification Administration, specific exemptions have been granted from commission regulation. The attempt to relieve electric co-operatives from commission jurisdiction has been given added impetus by certain unfortunate decisions by state commissions. One of the most amazing decisions was handed down by the Massachusetts Department of Public Utilities, and involved a request for a certificate of convenience and necessity in a situation where the record made it plain that the private company concerned was not expecting to undertake service. The Commission refused the certificate because the co-operative was to be financed through a loan of \$255,000 from the Administration and was raising a capital from its members amounting to only \$25,000.¹⁰¹

Fortunately, most states have been hospitable. In addition to the aforementioned enabling statutes, certain court decisions have further cleared the way by holding that rural electric co-operatives are not public utilities within the meaning of their state statutes. In what has become a leading case, the Washington Supreme Court summarized the case for excluding an electric co-operative from the public utility category:

"It does not conduct its operations for gain to itself, or for the profit of investing stockholders, in the sense in which those terms are commonly understood. It does not have the character of an independent corporation engaged in business for profit to itself at the expense of a consuming public which has no voice in the management of its affairs and no interest in the financial returns. Its members do not stand in the relation of members of the public needing the protection of the public service commission in the matter of rates and service supplied by an independent corporation.

"On the contrary, it functions entirely on a co-operative basis, typifying an arrangement under and through which the users of a particular service and the consumers of a particular product operate the facilities which they themselves own. The service, which is supplied only to members, is at cost, since surplus receipts are returned ratably according to the amount of each member's consumption. There is complete identity of interest between the corporate agency supplying the service and the persons who are being served. It is a league of individuals associated together in corporate form for the sole purpose of producing and procuring for themselves a needed service at cost. In short, so far as the record before us indicates, it is not a public service corporation."¹⁰²

While it is desirable to have some regulatory authority, either the state commission or the Rural Electrification Administration, provide periodic inspections to assure that proper safety standards are maintained, that all meters and other equipment are in good operating condition, and that proper accounts are kept and proper reports filed with the regulatory authorities, there is little need for more extended regulation with respect to rates, service, management, and the other matters which are the ordinary concern of the regulatory commission. To subject the electric co-operative to such regulation would

¹⁰¹ 1937 Report of Rural Electrification Administration, p. 106.

¹⁰² *Inland Empire Rural Electrification, Inc. v. Dept. of Public Service*, 199 Wash. 527, 92 P. (2d) 258, 263 (1939). See also *Garkane Power Co. v. Public Service Commission*, 98 Utah 466, 100 P. (2d) 571, 573.

impose upon it needless expense and add unnecessarily to the commission's burdens.

Obstacles encountered by co-operatives. Beyond the difficulties created by the adverse decisions of certain regulatory bodies, the rural electric co-operatives have had to meet the bitter opposition of the private companies. This opposition has taken the form of building "spite lines" into areas organizing their own co-operatives.¹⁰³ Some states, notably Illinois and Wisconsin, have sought to protect electric co-operatives from the building of spite lines by permitting a co-operative to retain the exclusive right to serve its area pending completion of the organization and construction of its system. Intensive propaganda to discredit the Rural Electrification Administration and the co-operative idea has been supplemented by direct action in sending out squads of canvassers to persuade farmers to withdraw from the co-operative, frightening and confusing them with false and misleading statements. In the early years, the co-operatives experienced great difficulty in getting reasonable wholesale rates, the usual rate offered approximating two cents per kilowatt-hour, and in some instances attempts were made to prevent the co-operative from selling at rates lower than those charged by the utility company.¹⁰⁴

REDUCTIONS IN COST OF SERVICE. The keynote of the program's success has been its remarkable achievements in reducing the cost of bringing electric service to rural sections. Reductions in costs have been achieved in the construction of the rural lines and their equipment, in lower prices for wholesale power, and in various aids to consumers to enable them to become members of the co-operative and increase their consumption of electric energy.

In the construction work, adaptations to the requirements of rural service, simplicity of design, and standardization, have achieved large savings. In the years prior to 1935, private companies calculated that an investment of \$1,500 to \$3,000 was required per mile of rural line; in contrast, the Rural Electrification Administration reports that it is building equally serviceable lines at \$500 to \$900 per mile. This result has been attained without any sacrifice of safety. Lower costs have been made possible in part by the development of new types of equipment, and in part by improvements in construction technique, the utilization of the moving-belt principle, that is, breaking up the construction into small, highly specialized sections and sending these sections along the line in waves.¹⁰⁵

But important as are the savings achieved through streamlined construction methods in comparison with piecemeal construction according to "battleship standards," the expansion of rural electrification would have been prevented by the high cost of equipment. This problem has been met by standardization and by mass purchasing. New types of equipment have been devised; members of the staff have actually invented some of the equipment required. The establishment of standardized voltages has further cut costs. As one example, instead of \$350 imported ground-testing meters, a meter developed by an

¹⁰³ These lines followed the "cream-skimming" pattern, making it impractical for a co-operative to organize to serve the thinner and less profitable parts of the region.

¹⁰⁴ The story of the opposition by private power companies is told in Chapter XIV of *Rural America Lights Up*.

¹⁰⁵ 1937 Report of Rural Electrification Administration, p. 58.

American inventor was placed in quantity production so that it sold at \$32 per meter.

Reasonable rates for wholesale power are indispensable if the co-operative is to afford an economical service. The Administration set one cent per kilowatt-hour as the maximum rate which its co-operatives should pay. At first great difficulty was encountered in negotiating contracts at this rate, which the Administration met in two ways: first, it conducted constant negotiations with the private companies in the interests of lower rates, and secondly, it allocated funds for the building of co-operative generating plants where the co-operatives were unable to obtain reasonable rates. Furthermore, as a service to the co-operative, the Administration checks all bills for wholesale power, and has secured refunds amounting to several thousands of dollars as a result of errors found in billing. In its 1939 report, the Administration was able to state that its co-operatives, outside of the Tennessee Valley Authority's area, were paying an average rate of 1.2 cents per kilowatt-hour for wholesale power, but that in many sections of the country substantially lower rates were available, both from private companies and from federal projects. As of 1940, there were 27 Administration generating plants in operation and 8 others for which funds had been allocated. In some instances, rural electric co-operatives have combined to operate their own generating facilities. Notable examples are the Wisconsin Power Co-operative (serving 12 co-operatives in northern Wisconsin), the Tri-State Power Co-operative (serving co-operatives in Wisconsin, Minnesota, and Iowa), the Tri-County Electric Co-operative (serving 17 counties in south and central Michigan). Some progress has also been made in interconnecting co-operatives, thereby affording the assurance of adequate service without the necessity for large standby capacity.¹⁰⁶

Rural electrification is a failure unless the farmers reached by the co-operative's lines use power both in the home and in farm operations. The first step has been one of educating the farmers by demonstrating the equipment available and the savings in cost that result from the use of electric power. Also, group wiring and group purchasing have given important savings. Manufacturers have been persuaded to make equipment particularly for the farm market.¹⁰⁷

Two programs have been devised to bring service to farmers unable to pay even the minimum monthly bills of \$2.50 to \$3.50. One plan has involved a special service for low-income farmers, that is, for those who can afford only \$1 a month for electricity, available only to those farmers located upon the lines of a co-operative. This special limited service has been made possible by the use of a low-cost, low-capacity transformer which permits the simultaneous operation of a few lights, a radio, and an electric iron, but which is not capable of carrying heavier loads. The purpose of the plan was to bring some of the benefits of electricity to the poorer farmers, but the plan also works to the benefit of the co-operative by helping it to build a better load. The second plan

¹⁰⁶ 1939 *Report of Rural Electrification Administration*, pp. 85-94.

¹⁰⁷ An example of such savings is afforded by the so-called "package of light" which the Administration persuaded eight manufacturers to make up, a package containing nine lighting fixtures suitable for lighting a six-room house; lighting fixtures which commonly sold for \$35.00 were thus obtainable at \$20.00.

is the self-help project. The members themselves build the project. An arrangement is made whereby the construction contractor employs the members for all unskilled labor. The wages paid the farmers enable them to wire their farms and perhaps even to buy a few appliances.

THE ACHIEVEMENTS. *Electrification of farms.* Before the program was launched less than 11 per cent of the farms of the country were receiving central-station service, the total number receiving service being approximately 744,000. After five years of operation more than 22 per cent of the farms of the country (some 1,513,000) were receiving electric service from central stations. Table 55 summarizes the progress by years. Most of this has been accom-

TABLE 55
RURAL ELECTRIFICATION

	1934	1935	1936	1937	1938	1939 ^a
Percentage of farmers receiving central-station service ^b	10.9	11.6	15.4	18.2	20.5	22.1
Number of farms receiving central-station service (ooo omitted) ^c	744	789	1,043	1,242	1,407	1,513
Estimated number of consumers of R.E.A. projects ^d	710,306					

^a All data as of December 31, except for 1939, for which June 30th figures are presented.

^b 1939 Report of Rural Electrification Administration, p. 352.

^c *Ibid.*, pp. 353-354.

^d *Ibid.*, pp. 350-351.

plished through Rural Electrification Administration projects, although the example has stimulated some private companies to undertake an extension of rural service in their territory. At the present time these projects are in all but four states. Table 56 presents the pertinent data by states as of June 30, 1939.

Loans. Even with allotments totaling approximately \$224,000,000 through the fiscal year 1939, the Administration has reported that the demand for funds continued unabated and that applications for \$50,000,000 remained unfilled.¹⁰⁸ As of June 30, 1938, these loans have been allocated to electric co-operatives to the extent of more than 85 per cent.¹⁰⁹

Low rates. Low rates and increasing consumption measure the benefits of rural electrification to the consumer. Rates must be high enough to provide the revenue needed to meet all operating and maintenance costs, interest on the loan and the amortization of payments to the government. Rates must be low enough so that farmers are encouraged to use electric energy in substantial quantities. The goal of rural electrification is the achievement of a 2-cent rate, or less, per kilowatt-hour as the average cost to consumers in all but the thin territory. At the present time, the typical rate for consumers is approxi-

¹⁰⁸ 1939 Report of Rural Electrification Administration, p. 3.

¹⁰⁹ Electric co-operatives received 85.9 per cent; power and irrigation districts, 5.4 per cent; private utility companies, 5.2 per cent; municipalities and other governmental agencies, 3.5 per cent. (1938 Report of Rural Electrification Administration, p. 12.)

mately $4\frac{1}{2}$ cents per kilowatt-hour. These rates compare with typical rates of 18 cents per kilowatt-hour for the World War period and 9 cents per kilowatt-hour for the postwar period.¹¹⁰ The Administration has been able to report steadily increasing use of electricity. Farmers in general consume more electric energy than city consumers: for 1937 farm consumers took nearly 40 per cent more energy per consumer than did nonfarm residents.¹¹¹ In spite of the fact that new members are usually small consumers and that most projects bring electric service to rural areas for the first time, the first year of operation usually shows an increase of about 20 per cent in average consumption per consumer. With increasing familiarity with the use of electricity, steady growth in farm consumption has been experienced. As the use of electricity brings new prosperity and well-being to the farmers, they are able to purchase additional appliances with further load-building results.¹¹²

The profits of electrification to consumers. In addition to the improvement in rural living standards and the gains in comfort and convenience, farm electrification has meant reduced costs and increased incomes to the farmers. The reports of the Administration cite many specific cases where farmers have effected large savings through the use of electric equipment. Reduced fire hazards have lowered the cost of insurance. Electric brooders for poultry farmers have not only proved better but less costly to operate than oil-burning brooders. The processing and refrigeration of milk has become easier, and higher standards of cleanliness have been made possible. Irrigation has been provided, utility motors have been installed, et cetera.

Financial success of the co-operatives. The electric co-operatives are still in their developmental period and it may be expected that their record of financial success will show improvement as they become seasoned projects. As of June 30, 1940, the program had 691 borrowers. Of this number, eighty-four had overpaid their accounts on principal and interest to the sum of \$458,702; and nineteen borrowers were underpaid in principal and interest account to the sum of \$82,447.¹¹³ These defaults were largely due to circumstances beyond the control of the borrower, such as floods, drought, pests, poor crops, or other abnormal local conditions. No loans have been reduced or written off as bad debts, and there have been no foreclosures. As of December 1, 1939, something over \$2,000,000 had been loaned in wiring and plumbing installation loans, and the collections on these loans showed less than 1 per cent delinquency.¹¹⁴ The Administration itself has met all payments on loans received from the Reconstruction Finance Corporation.

¹¹⁰ Slattery, *op. cit.*, pp. 80-89.

¹¹¹ Nonfarm consumers averaged 779 kilowatt-hours for domestic purposes and paid an average rate of 4.3 cents per kilowatt-hour and an annual average bill of \$34.00; farm consumers used 1,084 kilowatt-hours for domestic purposes, paid an average rate of 3.7 cents per kilowatt-hour, and an annual bill of \$40.00.

¹¹² 1939 *Report of Rural Electrification Administration*, pp. 124-130. A survey of the uses to which electricity was being put resulted in the following list of the ten appliances in most general use, with the percentage of consumers using each: "Hand iron, 84.2 per cent; radio, 82.4 per cent; washing machine, 58.9 per cent; refrigerator, 32.3 per cent; toaster, 31 per cent; vacuum cleaner, 21.3 per cent; hot plate, 19.2 per cent; water pump, 18.5 per cent; motor up to one horse-power, 18.2 per cent; and cream separator, 14 per cent." (*Ibid.*, p. 128.)

¹¹³ Slattery, *op. cit.*, pp. 77-78.

¹¹⁴ 1939 *Report of Rural Electrification Administration*, p. 134.

TABLE 56*
R.E.A. ALLOTMENTS BY STATES AS OF JUNE 30, 1939

Name of state	Number of borrowers or allottees	Total amount allotted	Amount allotted for construction	Amount allotted for working capital	Amount allotted for wiring and plumbing	Total miles ¹	Total consumers ¹	Approximate amount under construction or completed and not yet energized ²	Approximate amount completed and energized ²
Alabama	13	\$4,485,050	\$4,326,738	\$ 90,812	\$67,500	4,934	17,280	\$697,200	\$2,821,350
Arizona	3	578,000	578,000	.....	.....	400	1,553	.....	145,000
Arkansas	12	4,607,500	4,464,050	93,950	49,500	4,823	17,577	725,000	2,167,000
California	4	1,736,500	1,699,250	37,250	.....	1,322	3,705	.....	1,420,500
Colorado	10	2,902,000	2,799,940	78,060	24,000	2,576	8,301	.....	1,517,000
Connecticut									
Delaware	1	895,037	858,400	14,600	22,037	847	2,571	309,000	405,000
Florida	6	1,467,000	1,398,398	33,602	35,000	1,478	5,161	389,000	642,000
Georgia	34	11,076,615	10,327,988	229,252	519,375	10,445	47,422	987,000	9,479,240
Idaho	5	1,884,750	1,842,850	33,900	8,000	1,058	5,184	80,000	1,751,750
Illinois	23	12,009,630	11,665,702	265,928	78,000	10,682	34,416	4,247,500	4,797,130
Indiana	39	14,476,195	14,158,254	273,941	44,000	13,664	50,261	2,008,000	9,415,195
Iowa	48	14,184,128	13,603,207	419,421	161,500	12,546	34,421	2,398,000	9,488,128
Kansas	19	5,126,651	4,949,246	114,405	63,000	5,107	13,036	608,000	1,813,651
Kentucky	24	7,389,720	7,035,392	195,508	158,820	6,810	27,588	1,014,000	5,209,900
Louisiana	11	2,464,100	2,352,983	56,117	55,000	2,538	9,063	254,000	1,386,100
Maine	1	91,000	81,000	.....	10,000	69	386	.....	81,000
Maryland	2	629,000	607,107	11,893	10,000	387	1,414	.....	475,000
Massachusetts									
Michigan	14	10,726,000	10,307,200	165,800	253,000	9,029	33,156	50,000	9,962,000
Minnesota	35	14,656,736	13,940,257	440,572	275,907	12,708	35,893	1,581,000	11,526,329
Mississippi	21	6,001,700	5,784,451	138,749	78,500	6,559	25,069	1,607,000	3,470,200

Missouri	27	9,646,200	9,310,150	209,550	126,500	9,109	29,769	2,504,500	3,159,200
Montana	10	1,918,600	1,804,437	83,863	30,300	1,697	5,402	145,000	1,157,800
Nebraska	28	10,112,200	9,575,446	213,304	323,450	8,801	22,807	2,168,000	5,388,750
Nevada	1	222,000	217,000	.....	5,000	84	102	49,000	168,000
New Hampshire									
New Jersey	2	420,300	389,800	18,000	12,500	387	1,337	.....	407,800
New Mexico	3	705,000	639,800	27,200	38,000	597	1,547	177,000	341,000
New York	1	1,375,000	1,375,000	.....	.....	1,412	6,062	.....	750,000
North Carolina	21	4,984,350	4,698,421	112,029	173,900	4,912	20,878	1,484,000	2,406,450
North Dakota	5	1,666,972	1,527,100	38,872	41,000	1,493	4,242	250,000	678,972
Ohio	26	12,804,025	12,353,200	278,700	172,125	11,795	42,211	2,092,000	9,716,800
Oklahoma	18	5,859,000	5,668,838	139,662	50,500	6,238	19,015	1,020,000	3,076,000
Oregon	5	804,000	752,593	41,407	10,000	673	2,372	169,000	373,000
Pennsylvania	9	5,351,200	5,103,100	122,100	66,000	4,525	16,783	532,500	4,202,700
Rhode Island									
South Carolina	8	3,127,328	3,077,980	44,348	5,000	3,419	13,424	345,000	1,478,328
South Dakota	3	668,500	647,900	25,600	25,000	607	1,855	.....	562,000
Tennessee	14	8,154,058	8,070,253	78,805	5,000	6,509	35,240	695,300	3,279,758
Texas	53	15,962,685	15,280,895	361,805	310,985	17,712	53,982	4,644,000	9,157,700
Utah	3	559,000	529,000	12,000	18,000	417	1,529	74,000	5,000
Vermont	1	142,000	128,885	7,115	6,000	104	636	.....	66,000
Virginia	12	5,635,800	5,467,180	85,620	83,000	5,165	19,460	731,000	4,115,800
Washington	8	1,792,700	1,723,300	45,400	24,000	1,645	4,826	31,000	1,503,700
West Virginia	2	503,000	483,000	.....	20,000	427	1,538	.....	483,000
Wisconsin	28	12,566,800	12,005,495	306,305	195,000	9,095	28,198	2,919,000	8,573,800
Wyoming	8	1,565,800	1,473,527	39,273	53,000	1,221	3,634	229,300	925,500
Total for									
United States	621	\$223,903,830	\$215,211,713	\$4,984,718	\$3,707,399	206,776	710,306	\$37,214,300	\$149,040,931

* Source: 1939 Report of Rural Electrification Administration, pp. 350-351.

1 Figures represent estimates in construction loan contract.

2 Figures represent amount of construction loan contracts for which the most advanced stage of the work is indicated.

6. FEDERAL POWER PROJECTS

HYDROELECTRIC PROJECTS AND THE FEDERAL POWER POLICY. The development of federal hydroelectric projects is no new adventure. For more than thirty years the Bureau of Reclamation has developed hydroelectric power as a by-product at dams built for irrigation and water-supply purposes. More recently, the federal power projects have gone beyond the initial scope of the Bureau of Reclamation's work to multiple-purpose projects and even large regional developments, such as those under the Tennessee Valley Authority and Bonneville Power Administration.

The theory that the federal government itself should undertake hydroelectric projects was expressed as early as 1903 by President Theodore Roosevelt in vetoing a bill to permit the construction of a project by a private company at Muscle Shoals, Alabama. Said the President:

"The recent development of the application of water power to the production of electricity available for use at considerable distances has revealed an element of substantial value in streams which the Government is, or is liable to be called upon to improve for the purposes of navigation and this value, in my judgment, should be properly utilized to defray the cost of the improvement. Wherever the Government constructs a dam and locks for the purpose of navigation, there is a waterfall of great value.

"... When the Government is or may be called upon to improve a stream, the improvement should be made to pay for itself, so far as practicable."¹¹⁵

Pecuniary savings are not the only considerations supporting the development of hydroelectric resources by the government itself. In many instances, a dam for the development of hydroelectric power is capable of serving a number of purposes—the control of flood waters, the improvement of navigation, or the conservation of water for irrigation or water supply. A utility seeking to develop hydroelectric power can scarcely be asked to make the added investment necessary to accomplish these other purposes unless one of two situations prevails—first, that the revenues from the sale of power are expected to exceed the cost involved in these other projects and that there is no objection to imposing upon electric consumers the cost of improvements for flood control and navigation; or secondly, that the government undertake to subsidize the company to the extent of the investment required for these other public purposes. In many instances, the plan for the development and improvement of a river basin will be quite different where there are multiple objectives, calling for the location of dams at sites which would not be considered economical if power development were the sole objective. The economic justification for undertaking multiple-purpose projects is found in the overall savings that are effected in comparison with the larger costs that would be necessary to accomplish these several purposes—flood control, navigation improvement, water conservation, and power development—by uncorrelated and unintegrated projects.

POWER PROJECTS OF THE BUREAU OF RECLAMATION. Since 1908, when the in-

¹¹⁵ 36th *Congressional Record*, Part 3, p. 3071; appendix 2, pp. 36-43; appendix 19, pp. 47-51.

ital unit was installed at the Strawberry Valley Project, the Bureau of Reclamation has been engaged in the development of hydroelectric power as a by-product of the construction and operation of its various projects. Table 57 summarizes the data with respect to such power projects as of June 30, 1940.

Some projects consist of a single unit, while others have a number of separate or integrated units, as for example, the Salt River Project, which has eight plants. Some projects are operated by the Bureau of Reclamation; others, by utility companies, co-operatives, or municipalities. At the Boulder Dam development, the power is generated by the Bureau of Power and Light of the City of Los Angeles and the Southern California Edison Company. Many of the projects are quite small, having an installed generating capacity of only a few hundred kilowatts. On the other hand, the Boulder Dam development, with its 704,800 kilowatts of capacity, is the world's largest.

The development of electric power for sale is strictly a by-product at the Bureau's projects, the power required for irrigation, drainage, pumpage, and other project purposes having priority over the utility sale of power. The statistics with reference to the investment or total cost of the project and those for operating costs apply solely to the generation and transmission of electric power and do not include figures for the investment in the dam and other project work that would be required even though no power were developed.

THE BOULDER DAM PROJECT. The Boulder Dam Project is the largest undertaking of the Bureau of Reclamation. The dam itself is the world's highest, having a height of 727 feet above bedrock and impounding the world's largest artificial lake, extending 115 miles up river and having a maximum capacity of 30,500,000 acre-feet of water. The power house at the base of the dam is also the world's largest, both in physical size and in the capacity of its generators. The Boulder Canyon Project serves a fivefold purpose of flood control, irrigation, silt control, water storage, and electric power development.

The Boulder Canyon Project was built by the Secretary of Interior under the Boulder Canyon Project Act.¹¹⁶ The dam itself required five years for construction. The first power was generated in September, 1936.

The generation of power is carried out by those who have contracted with the Secretary of Interior for the purchase of power privileges at Boulder Dam. The Boulder Canyon Project Act provided that the government should erect a power plant at Boulder Dam and should install generating equipment as required by the purchasers of Boulder Dam power. The right to generate electric energy in the government-built plant may be leased under contract, or alternately, contracts may be entered into for the use of water for the generation of electric energy.¹¹⁷ At the present time the Bureau of Power and Light of the City of Los Angeles generates and transmits power for the municipalities and other public bodies that are buying Boulder Dam power, while the Southern California Edison Company performs the same function for the private utility companies. The city of Los Angeles and the Southern Califor-

¹¹⁶ 45 Stat. 1057, Ch. 42. (Dec. 21, 1928). In *Arizona v. California*, 283 U.S. 423 (1931), the Supreme Court upheld the constitutionality of the Boulder Canyon Project Act, holding in effect that the United States may perform its function, in this instance the improvement of navigation, and other functions, without the necessity of conforming to the laws of any state.

¹¹⁷ *Ibid.*, Sec. 6.

TABLE 57
DATA ON POWER PLANTS
OPERATED ON BUREAU OF RECLAMATION PROJECTS AS OF JUNE 30, 1940

Project	Year of initial installation	Total installed generating capacity in kilowatts	Estimated average annual potential output in kw-hr (000 omitted)	Peak demand on plant during year in kw.	Total Power investment ^a	Operating costs (without depreciation)	Estimated depreciation
Boise	1912	9,875	65,000	12,478	\$ 582,222.58	\$ 15,797.07	\$15,291.12
Boulder Canyon	1936	704,800	4,312,480	600,600	146,622.57 ^b	Not available	Not available
Grand Valley	1932	3,000	8,000	3,500	210,500.00 ^c		
Kendrick	1939	32,400	144,000	24,900	4,260,400.00	24,330.00	None
Munidoka	1909	10,000	81,988	10,460	1,110,195.86	47,044.37	37,999.76
Newlands	1911	1,500	8,000	1,875	324,793.52	14,443.84	7,619.84
North Platte	1918	6,550	27,000	7,840	1,171,978.86	45,289.98	None
Rio Grande	1916	24,450	140,800	100	(incomplete) 1,298,737.50		None
Riverton	1925	1,600	4,200	1,940	362,246.94	22,225.93	None
Salt River	1911	70,950	240,950	69,250	20,920,993.00	627,913.51	None
Shoshone	1922	5,600	45,000	3,700	883,037.48	16,711.31	None
Strawberry Valley	1908	1,150	6,500	1,675	184,731.77	11,662.39	None
Yakima (Kennewick division) (Sunnyside division)	1917	3,187.5	27,312	3,168	431,398.00	9,309.00	1,056.40
Yuma	1926	2,000	8,000	1,250	322,528.53	10,984.06	7,950.00

Project	Cost per kw-hr exclusive of depreciation	Distribution of power generated in kilowatt-hours					Total generated for year	Gross in- come from sale of power (U.S. and commercial)
		Sold to consumers	Used for irriga- tion and drain- age pumping	Used for other purposes	Losses			
Boise	\$0.00037 0.00069	30,880,998	26,555,745	864,455	1,332,586	59,633,784	\$ 96,548,78	
Boulder Canyon	Not available	2,801,703,774	None	18,192,065	14,544,787	2,834,248,000	44,613,933-89	
Grand Valley		Not available	—	—	—	9,464,930	—	
Kendrick	0.000943	30,165,888	None	672,147	2,721,365	33,550,400	90,921.68	
Minidoka	0.000682	24,387,739	34,866,165	5,828,165	3,828,958	68,911,477	183,055.94	
Newlands	0.001805	7,448,517	13,937	16,208	522,998	8,001,660	54,483.04	
North Platte	0.00291	21,634,322	167,225	272,210	1,854,073	19,618,820	240,226.55	
Rio Grande	0.004 0.0062	None	None	601,450	Unknown	601,450	None	
Riverton	0.00458	4,267,994	None	432,540	171,226	4,852,940	56,114.70	
Salt River	0.002212	247,634,170	51,999,164	460,898	62,414,496	205,123,910	2,431,673.50	
Shoshone	0.00132	11,670,257	None	33,925	968,930	12,673,112	103,133.31	
Strawberry Valley	0.0017	7,034,507	900	36,733	306,061	6,860,001	72,855.08	
Yakima (Kennewick division) (Sunnyside division)	0.00040 0.00227	18,433,884	731,400	32,081	404,455	19,601,820	38,153.77	
Yuma	0.001672	6,093,567	1,869,115	91,107	428,143	8,327,732	38,435.52	

^a Costs are for power plant and transmission systems only; costs of dams not included.

^b Cost of power plant not included.

^c Transmission plant owned by lessee; cost of power plant only.

nia Edison Company co-operate both in the generation and transmission of Boulder Dam power.

Bringing Boulder Dam power to market constitutes a most notable engineering achievement. The City of Los Angeles built and operates the 266-mile transmission line, which set new standards for long-distance high-voltage commercial transmission of power. At Boulder Dam the power is stepped up to a voltage of 287,500 and arrives at the receiving station at 275,000 volts. The transmission system required pioneering engineering research by the Bureau of Power and Light of the City of Los Angeles.

The financing of the Boulder Canyon Project. The Boulder Canyon Project cost \$165,000,000, of which \$70,600,000 was the cost of the dam and reservoir, \$38,200,000 the investment in power development, \$38,500,000 the cost of the All-American canal, and \$17,700,000 the charge for interest during construction. The sum of \$165,000,000 was appropriated by Congress, and the statute provided that of this sum \$25,000,000 should be allocated to flood control.¹¹⁸

The total investment in the transmission system was approximately \$30,000,000, of which \$22,799,000 was secured through a Reconstruction Finance Corporation loan granted in February, 1933. With the improvement in the investment market, the Bureau issued its revenue bonds in October, 1935, and immediately repaid the loan.

The Boulder Canyon Project Act provided that, prior to beginning construction, the Secretary of Interior must have concluded contracts assuring revenues sufficient in his judgment to pay all expenses for operation and maintenance and to repay within fifty years of completion all amounts advanced for the construction together with interest thereon.¹¹⁹ In June, 1930, the Secretary of Interior announced that the contracts had been signed.¹²⁰

The distribution of power. The water available at Boulder Dam is subject to certain priorities: first, for river regulation, improvement of navigation, and flood control; secondly, for irrigation and domestic uses; and thirdly, for electric power.¹²¹ The power available for sale was allocated—to Arizona and Nevada, 18 per cent each, to be contracted for whenever needed; to Los Angeles, 15 per cent; to the three municipalities of Pasadena, Glendale, and Burbank, 4 per cent; to the Metropolitan Water District, 36 per cent; and to three utility companies, 9 per cent (Southern California Edison Company, 7.2 per cent, Southern Sierras Power, 0.9 per cent, and Los Angeles Gas and Electric, 0.9 per cent). The Metropolitan Water District may demand all of the unused state energy, although it is not required to take it, and all of the secondary energy, although it is not required to take that; and subject to the Metropolitan

¹¹⁸ *Ibid.*, Sec. 2 (a) and (b).

¹¹⁹ *Ibid.*, Sec. 4 (b).

The \$25,000,000 allocated to flood control was to be amortized through the application of 62½ per cent of the net revenues remaining after all expenses of operation and the above amortization payments had been met.

¹²⁰ The Bureau of Power and Light of the City of Los Angeles was the principal contractor. Indeed, without the assured market afforded by the Bureau of Power and Light and without the support of the City of Los Angeles for the enactment of the bill, it is doubtful whether the Boulder Act would have passed Congress.

¹²¹ *Ibid.*, Sec. 6.

The leasing of surplus water power by the Secretary of the Interior at dams operated by the reclamation service was authorized in 1906 in an amendment to the Reclamation Act of 1902. (34 Stat. 116, 117.)

Water District's prior claim, the City of Los Angeles may absorb one-half of the unused state energy.¹²²

The power generated at Boulder Dam is sold on the basis of 1.63 mills per kilowatt-hour of firm energy and at the rate of 0.5 mills for secondary energy under the contract between the Los Angeles Bureau of Power and Light and the federal government, which became operative on June 1, 1937. For the year ending June 30, 1940, the Bureau of Power and Light paid a total of \$2,693,161.66 for production expenses at Boulder Dam. Of this sum, \$2,128,500.17 was payment to the federal government for power privileges (\$2,013,390.70 was based on the firm energy rate, and \$115,109.47 on the secondary energy rate), \$440,863.31 was the rental payment for generating facilities, and \$123,798.18 for other expenses. During this period the City of Los Angeles received 1,235,209,023 kilowatt-hours of firm energy and 226,544,595 kilowatt-hours of secondary energy.¹²³ In July, 1940, the Boulder Canyon Project Adjustment Act was passed by Congress. It provides for a redetermination of energy rates based upon estimated revenues and expenses for the fifty-year period of the agreements with revision retroactive to June 1, 1937, the periodic review and adjustment of rates in the future, and the reduction of the interest rate used in computing costs from 4 per cent to 3 per cent.

THE TENNESSEE VALLEY AUTHORITY. *A background of controversy.* The improvement of the Tennessee River has received the attention of the federal government since early in the last century. From that time to the First World War private power interests exhibited a desire to develop the hydroelectric resources of the river.¹²⁴ As a part of the World War defense effort, the President was authorized to build dams and install power equipment for the purpose of producing nitrates, but it was not until 1925 that the first of the three projected dams, the Wilson Dam, was completed.¹²⁵

¹²² Department of Interior, *The Hoover Dam Power and Water Contracts and Related Data* (by R. L. Wilbur and N. Ely), p. 25.

¹²³ BOULDER DAM ENERGY TAKEN BY CITY OF LOS ANGELES

	Kilowatt-hours		Amount	
	Firm energy	Secondary energy	Firm energy	Secondary energy
Month of June 1937	67,979,494	5,206,836	\$ 110,806.57	\$ 2,603.42
Year ended June 30:				
1938	827,253,904	308,757,734	1,348,423.88	154,378.87
1939	1,007,359,567	235,906,211	1,641,996.10	117,953.10
1940	1,235,209,023	226,544,595	2,013,390.70	115,109.47
	3,137,801,988	776,415,376	\$5,114,617.25	\$390,044.86
	3,914,217,364		\$5,504,662.11	

"Note—The above table does not include 493,954,534 kilowatt-hours taken under an interim agreement from October, 1936, to June 1, 1937. The charge for such energy was at the rate of one-half mill and amounted to \$246,977.27."—From City of Los Angeles, *Report and Accounts of the Bureau of Power and Light as of June 30, 1940.* (By Price, Waterhouse & Co.)

¹²⁴ Report of the Joint Committee Investigating the Tennessee Valley Authority, 76 C., 1st s., Sen. doc. No. 56, pp. 12-13.

¹²⁵ 39 Stat. 166, 215; H.R. doc. No. 1262, 64 C., 1st s.

Following the World War, proposals for transferring the power facilities at Muscle Shoals to private industry, and counter-proposals for the further development of hydroelectric power by the government, were debated, but all save two failed to command the necessary support in Congress. On May 25, 1928, a bill passed both Houses providing for a corporation to produce and sell both fertilizer and power and to construct an additional dam on Cove Creek (the present site of the Norris Dam), but this bill was pocket-vetoed by President Coolidge.¹²⁶ On March 3, 1931, President Hoover vetoed a similar bill, on the ground that the government should not compete with its citizens.¹²⁷ When President Franklin D. Roosevelt came to office, plans for development of the hydroelectric resources of the Tennessee River were again brought to the fore. On April 10, 1933, the President's message to Congress recommended the passage of legislation providing for the unified development of the entire Tennessee Valley.¹²⁸ The Tennessee Valley Authority Act was approved on May 18, 1933.

The enactment of the Tennessee Valley Authority Act did not terminate the controversy. Differences of opinion within the board of directors of the Tennessee Valley Authority developed into a political issue and resulted in a prolonged investigation by a joint committee of both houses of Congress.¹²⁹

The development of the Tennessee Valley program was opposed at every turn by the private utility companies; suits were carried to the Supreme Court challenging the constitutionality of the Act and the establishment of municipal plants.

The Act. The original Tennessee Valley Authority Act was approved May 18, 1933, and subsequently amended by an Act signed August 31, 1935.¹³⁰ The Act created the Tennessee Valley Authority, a government corporation, for the purpose of maintaining and operating the government property at Muscle Shoals, Alabama, and for the further development of the Tennessee River and its tributaries in the interests of navigation improvement, flood control, and the production of power. The corporation is managed by a board of three directors appointed by the President, by and with the advice of the Senate, for nine-year terms, except for the initial appointees.¹³¹ The directors may have no financial interest in any business that may be adversely affected by the success of the corporation, and they must be persons who "profess a belief in the feasibility and wisdom of the act."¹³²

The board of directors has broad powers to manage the affairs of the Au-

¹²⁶ H. Rept. 1095, 70 C., 1st s.

¹²⁷ S. doc. 321, 71 C., 3d s., page 6.

¹²⁸ 73 C., 1 s., House doc. No. 15.

¹²⁹ *Report of the Joint Committee Investigating the Tennessee Valley Authority*, 76 C., 1 s., Sen. doc. No. 56. See also the *Reports and Exhibits*, 76 C., 1 s., Sen. doc. No. 56, pts. 2 and 3.

¹³⁰ 48 Stat. 58, Ch. 32, amended 49 Stat. 1075, Ch. 836.

¹³¹ *Tennessee Valley Authority Act*, as amended, Sec. 2.

¹³² The original board consisted of Arthur E. Morgan, president of Antioch College, as chairman, H. A. Morgan, president of the University of Tennessee, and David E. Lilienthal, a member of the Wisconsin Public Service Commission. Mr. A. E. Morgan held office as chairman until March 22, 1938, when he was removed by the President, and his place was taken by Dr. H. A. Morgan. The removal of Mr. A. E. Morgan was the result of dissension within the board which precipitated the Congressional investigation. Subsequently, former Senator James E. Pope became the third director.

thority. It may employ all necessary officers and employees.¹³³ It is authorized to acquire property for the construction of dams, reservoirs, transmission lines, power houses, and other structures, and to construct dams and reservoirs in the Tennessee River and its tributaries.¹³⁴ It may lease the nitrate plants at Muscle Shoals—which must be maintained in stand-by condition for the emergency production of explosives—for the commercial manufacture of fertilizers, and it may also engage in educational and experimental work with respect to the more economical production of fertilizers and their use.¹³⁵ It is also authorized to sell any surplus power not used in its operations.

The objectives of the Act are broad enough to include the entire economic, social, and cultural development of the Tennessee Valley, including specifically "flood control, soil erosion, afforestation, elimination from agricultural use of marginal lands, and distribution and diversification of industry." To promote these ends, the Authority is instructed to make surveys and prepare plans "for the general purpose of fostering an orderly and proper physical, economic and social development" of the area.¹³⁶ In the operation of its dams and reservoirs, the board is directed to give first consideration to the regulation of streams both for the purposes of promoting navigation and controlling floods. So far as is consistent with these primary purposes, the board is further directed to provide and operate facilities for the generation of electric energy in order to avoid the waste of water power, and to market such power in order to assist in liquidating the cost or aid in maintaining the projects.¹³⁷

The constitutionality of the Act. Though the constitutionality of the Tennessee Valley Authority Act has been challenged on every conceivable ground, the cases reaching the Supreme Court have all been disposed of favorably to the Authority without passing directly on the basic constitutional questions. During the first five years of its history—that is, to June 30, 1938—the Act had been attacked on constitutional grounds in 57 cases, of which 41 were brought by private persons and corporations and 16 were condemnation cases instituted by the Authority. Of the 41 cases directly attacking the constitutionality of the Act, the Authority was the defendant in 19, and municipalities or co-operatives seeking to deal with the Authority were defendants in the other 22. Despite the fact that all of the cases were ultimately disposed of favorably to the Authority, the litigation delayed the development of the power program, and caused large losses to the Authority and to those who would have dealt with it.¹³⁸

Three of the nineteen cases in which the Authority was named defendant reached the Supreme Court, and three of the cases in which the defendants were municipalities or co-operatives also reached the Supreme Court.¹³⁹ By

¹³³ *Tennessee Valley Authority Act*, as amended, 49 Stat. 1075, Sec. 3.

¹³⁴ *Ibid.*, Secs. 4 and 12.

¹³⁵ *Ibid.*, Sec. 5.

¹³⁶ *Ibid.*, Sec. 22.

¹³⁷ *Ibid.*, Sec. 9A.

¹³⁸ "... It [the Authority] estimates a loss to the Authority in wholesale power revenues of \$5,325,644. Losses to consumers, resulting from delays in obtaining the benefit of low Authority rates are estimated at \$7,702,100. Taking into consideration also the Authority's direct legal expenses the total losses are estimated by the Authority at \$13,545,903." (*Report of the Joint Committee Investigating the Tennessee Valley Authority*, pp. 65-66.)

¹³⁹ *Ibid.*, p. 63.

one line of attack, the power companies sought to enjoin the Public Works Administration from making loans and grants to seven Alabama cities and towns for the construction of municipal distribution systems. The Supreme Court concluded that the municipalities had the right under state law to engage in the electric business in competition with the private company, for the latter had no exclusive franchise; that the injury or damage which the companies anticipated followed from lawful competition, not from the loans; and that, therefore, the companies were without any legal right to enjoin the making of the loans.¹⁴⁰

Other suits named the Authority as defendant. The *Ashwander* case grew out of a contract between the Authority and the Alabama Power Company for the purchase of the company's transmission facilities in the vicinity of Wilson Dam. The suit was brought by fourteen preferred stockholders of the company, seeking to enjoin the performance of the contract on the grounds that the Act was unconstitutional, and the contract, therefore, invalid. The Supreme Court decided the case without passing upon the constitutionality of the Act as a whole, concentrating on the right to sell the power generated at Wilson Dam. Finding that the Wilson Dam had been constructed for constitutional purposes (national defense and navigation), the Court held that the Authority could legally sell and transmit to markets over its own lines the power generated at Wilson Dam.¹⁴¹

The *Eighteen-Power-Companies* case presented the broadest challenge to the constitutionality of the Act and effectively blocked the Authority's power program for more than six months.¹⁴² Again, the Court did not find it necessary to determine whether the Authority had the constitutional right to engage in the acts that were subject to the complaint. Instead, it ruled that the power companies possessing no exclusive monopoly and having no right to be free of competition, had no legal basis to challenge the acts of the Authority or the constitutionality of the law under which it operated.

The litigation involving the Tennessee Valley Authority has afforded the Supreme Court numerous opportunities to declare the legislation unconstitutional, but the Court has preferred to rest its decisions on narrower grounds. As a result of these decisions it would seem difficult for future cases to raise the question whether the Act is constitutional.

The construction program. The construction program has been carried

¹⁴⁰ *Alabama Power Co. v. Ickes*, 302 U.S. 464 (1938); *Duke Power Co. v. Greenwood County*, 302 U.S. 485 (1938).

¹⁴¹ *Ashwander v. T.V.A.*, 297 U.S. 288 (1936).

¹⁴² *Tennessee Electric Power Co. v. Tennessee Valley Authority*, 306 U.S. 118 (1939). Mr. Justice Roberts delivered the opinion of the Court, with Chief Justice Hughes and Justices Brandeis, Stone, Black, and Frankfurter concurring. Justices Butler and McReynolds dissented. Mr. Justice Reed took no part in this case.

The power companies asked: "that the defendants be restrained from generating electricity out of water power created, or to be created, pursuant to the Act and the Authority's plan of construction and operation; from transmitting, distributing, supplying or selling electricity so generated, or to be generated, in competition with any of the complainants; from constructing, or financing the construction of, steam or hydroelectric generating stations, transmission lines or means of distribution, which will duplicate or compete with any of their services; from regulating their retail rates through any contract, scheme or device; and from substituting federal regulation for state regulation of local rates for electric service, more especially by incorporating in contracts for the sale of electricity terms fixing retail rates." (P. 135.)

through as a continuing enterprise. The Authority now has fourteen dams in operation (some acquired by purchase) or under construction. Table 58 lists the dams, with their dates of completion and potential capacity. Full provision is being made for improvements in navigation and flood control in the dams

TABLE 58 *
CONSTRUCTION PROGRAM OF THE TENNESSEE VALLEY AUTHORITY

<i>Project</i>	<i>Date of Completion</i>	<i>Ultimate Capacity (Kw)</i>
Kentucky	1945	160,000
Pickwick Landing	1938	216,000
Wilson	1926	444,000
Wheeler	1937	259,200
Guntersville	1940	97,200
Hales Bar ^a	1913	50,483
Chickamauga	1941	108,000
Watts Bar	1943	150,000
Fort Loudoun	1944	96,000
Norris ^b	1937	100,800
Hiwassee ^b	1941	115,200
Cherokee ^b	1943	120,000
		<u>1,916,883</u>

* Source: Tennessee Valley Authority, *Annual Report, 1940*, pp. 16-18.

^a Acquired by purchase from the Tennessee Electric Power Co. Four other dams were also acquired from the same company: Ocoee No. 1, 18,000 kw.; Ocoee No. 2, 28,200 kw.; Blue Ridge, 20,000 kw.; and Great Falls, 29,370 kw.

^b Located on tributaries.

erected, but the installation of generating equipment is planned to meet the development of the market for electric energy.

The cost of the program. As of June 30, 1940, the funds appropriated and the properties transferred to the Authority totaled \$303,881,684.62.¹⁴³ As of the same date, the fixed assets were carried at \$320,477,459.46. The Authority showed a net expense for operations of \$23,860,419.22, only the power program showing net income of \$5,193,865.10 for the seven years from June 16, 1933 to June 30, 1940.¹⁴⁴ It is anticipated that the total cost of the project will exceed \$500,000,000.¹⁴⁵

The allocation of costs. The Act required that the Authority ascertain how much of the cost of its properties should be allocated and charged to the various purposes for which the project was undertaken—flood control, navigation, fertilizer, national defense, and the development of power. The law further provided that these allocations, when approved by the President, should be final and should be used for the purpose of keeping the books and accounts of the project.¹⁴⁶

¹⁴³ Of the assets transferred from the War Department, Wilson Dam and the equipment and supplies at Muscle Shoals were recorded at a reduced original cost less accrued depreciation as of July 1, 1933; and the Wheeler navigation lock and the design for the Pickwick navigation lock at original cost. These four items amounted to \$33,812,414.62.

¹⁴⁴ *Annual Report, 1940*, pp. 54-55.

¹⁴⁵ *Report of the Joint Committee Investigating the Tennessee Valley Authority*, p. 152.

¹⁴⁶ *Tennessee Valley Authority Act*, Sec. 14.

The theory that the rates established by the Authority may serve as a yardstick to determine the reasonableness of the rates charged by private companies has made the determination of the cost of producing power a critical issue, and has led to much controversy with respect to the allocation of the investment.

Three theories of allocation have been suggested:

(1) It has been proposed that, since in the past the federal government has required that power companies licensed to develop projects on navigable streams bear the total cost of any expense for navigation improvement, the total investment should be charged to power. This is the *no-allocation theory*. However, the multiple-purpose dams of the Authority are not comparable to those erected by private power companies; the dams are located with reference to the requirements of navigation and flood control, whereas the projects constructed by private companies are located and designed with primary regard to the economical generation of power, any expenditures for navigation works being limited to construction of an incidental character. Also, the Authority is not permitted to regulate the flow of water primarily for the purpose of producing power. Clearly, this theory would impose unwarranted costs upon consumers of power.

(2) The *incremental-power-investment theory* has proposed that the total investment should be charged to power production after deducting the estimated cost of the most economical alternative plan for accomplishing the other purposes. This theory would be justifiable only if navigation and flood control were subordinate to the power program, and if the "most economical alternative plan" would provide an equally satisfactory scheme for flood control and an equally effective improvement in navigation.¹⁴⁷

(3) The theory adopted by the Authority has been designated the *alternate-justifiable-expenditure theory*. This theory assumes that each of the principal purposes—navigation improvement, flood control, and power development—is equally important, and that each should carry a share of the common costs equivalent to the savings which each purpose enjoys through combination in a multiple-purpose enterprise.¹⁴⁸

The committee investigating the Tennessee Valley Authority described the alternate-justifiable-expenditure theory as follows:

"The total cost of the 10 dams, with an installed electric capacity of 1,401,500 kilowatts, is estimated at \$407,809,864.

"1. The direct costs of navigation, flood control and power were computed separately, as being the amount that could be saved by eliminating that function from the multiple-purpose program.

"By eliminating navigation \$44,880,800 could be saved; or by eliminating flood control \$33,763,000 could be saved; or by eliminating power \$108,884,965 could be saved.

¹⁴⁷ The figures submitted on the basis of this theory were rejected by the majority of the Congressional investigating committee because the alternative plans were not considered equally satisfactory.

¹⁴⁸ *Report of the Joint Committee Investigating the Tennessee Valley Authority*, pp. 153-161. See also Glaeser, "Those Joint TVA Costs," 24 *P. U. Fort.* 259 (Aug. 31, 1939).

"Taken all together, these direct costs leave \$220,281,099 of the total multipurpose costs still unallocated. This remainder represents common costs and may be considered as the cost of combining the three uses into one project and is allocated by the following process.

"2. For comparison with direct costs as found in the multiple system, the separate costs of alternative one-use systems were computed.

"A system built for navigation alone, based mainly on the '18-dam plan,' suggested by the Army engineers would have cost \$163,519,900.

"A system built only for flood control would have cost \$140,826,000.

"A system built only for power production would have cost \$250,096,000. (These are, of course, on Tennessee Valley Authority estimates.)

"3. The next step was to determine the sum of the alternative single purpose costs remaining after deducting the direct costs identified in the multipurpose costs, in order to compare the remaining alternative costs with the corresponding costs of the multipurpose system.

"The direct cost for navigation in the combined system is \$118,639,100 less than the cost of a system for navigation alone.

"The direct cost for flood control in the combined system is \$107,063,000 less than the cost of a system for flood control alone.

"The direct cost for power in the combined system is \$141,211,035 less than the cost of a system for power alone.

"The sum of these differences is therefore \$366,913,935; the common cost of bringing them into combination, as given in (1) is \$220,281,099, called in the report 'remaining multiple-use costs.'

"4. The remaining costs, \$220,281,099, are allocated to the three purposes in the ratios of the respective single purpose remaining alternative cost (3) to the sum of those alternative costs. The items are as follows:

To Navigation, 32.2 per cent, or	\$70,921,048
Flood control, 29.7 per cent, or	65,386,808
Power, 38.1 per cent, or	83,973,243
Total expense of combining	220,281,099

"5. Adding the direct costs to the allocated common cost of combining them into a multiple use project:

	<i>Direct</i>	<i>Remainder</i>	<i>Total</i>	<i>Per cent</i>
Navigation	\$44,880,800	\$70,921,048	\$115,801,848	28.4
Flood control	33,763,000	65,386,808	99,149,808	24.3
Power	108,884,965	83,973,243	192,858,208	47.3
Total	187,528,765	220,281,099	407,809,864	...

"The committee's engineers accept Colonel Parker's allocation, subject to various minor changes. There is also to be added an estimated cost of \$75,500,000 for transmission, charged wholly to electricity. Mr. Panter's modification of Colonel Parker's results is shown below:

		Panther	Tennessee Valley Authority
		Per cent	Per cent
Navigation	\$121,789,873	24.1	24.0
Flood control	104,061,813	20.6	20.5
Power and transmission	279,488,335	55.3	55.5
Total	505,340,021	....	....¹⁴⁹

The alternate-justifiable-expenditure theory affords a justifiable basis for the allocation of the investment costs. But the validity of the application of the theory can be judged only when actual-cost figures, rather than estimates, are available.

Navigation. The Act contemplates the improvement of the Tennessee River to provide a nine-foot channel from the mouth of the river to Knoxville, a distance of 650 miles. In its 1940 report, the Authority stated that although the project was far from completion there had been an appreciable increase in freight movement on the Tennessee River, the traffic consisting largely of gasoline, grain, and forest products. The volume of traffic increased from 22,482,000 ton-miles in 1933 to 70,700,000 ton-miles in 1939.

Flood control. In the Tennessee Valley, the principal flood danger is at Chattanooga. The completion of the ten-dam system will reduce flood heights at Chattanooga by some seven or eight feet. What effect the program will have in controlling flood waters in the Ohio and the Mississippi is problematic.¹⁵⁰

A market for power. The policy to be followed in the distribution and sale of the surplus power generated by the Authority is set forth in the statute: the projects are to be considered primarily for the benefit of the people of the entire section, particularly the rural and domestic consumers; the sale of power to industry is secondary and for the purpose of securing an improved load factor and revenues, which will permit the lowest possible rates to domestic and rural consumers.¹⁵¹ In furtherance of this basic policy, preference in the sale of surplus power must be given to the requirements of states, counties, municipalities, and co-operative organizations not organized or doing business for profit.¹⁵² In contracts for the sale of power, such conditions may be attached as appear appropriate to promote the wide availability of abundant power at low cost. And power may be sold to private corporations for resale to consumers only if the purchaser agrees not to resell at prices in excess of those fixed by the board as just, reasonable, and fair.¹⁵³

The fulfillment of the policy thus laid down by Congress necessitated that the Authority be able to take its power to the markets where demand existed, and that it be legally and economically possible for public bodies to organize to undertake the retail distribution of the power. At the time the Act was passed, there was only one transmission line to the Wilson Dam and that was owned by the Alabama Power Company. The Authority is therefore per-

¹⁴⁹ Report of the Joint Committee Investigating the Tennessee Valley Authority, pp. 157-158.

¹⁵⁰ *Ibid.*, pp. 140-144.

¹⁵¹ Tennessee Valley Authority Act, Sec. 11.

¹⁵² *Ibid.*, Sec. 10.

¹⁵³ *Ibid.*, Sec. 12.

mitted to acquire or construct transmission lines.¹⁵⁴ It has been the practice of the board to purchase existing facilities in order to avoid wasteful duplication and to provide protection for private investments.¹⁵⁵ As of June 30, 1940, the Authority had in operation over 4,600 miles of transmission line, with voltages ranging from 12,000 to 154,000.

Distribution systems. The Authority has promoted the development of public agencies and co-operatives to undertake the retail distribution of power. It is required "to advise and co-operate with and assist, by extending credit for a period of not exceeding five years to States, Counties, municipalities and nonprofit organizations . . . in acquiring, improving, and operating (a) existing distribution facilities and incidental works, including generating plants; and (b) interconnecting transmission lines; or in acquiring any interest in such facilities, incidental works, and lines."¹⁵⁶ In furtherance of this program, the Authority and the Rural Electrification Administration have extended funds to aid in the construction of facilities for co-operatives. As of July 18, 1940, there had been twenty-eight properties purchased from private corporations by the Authority acting in co-operation with local co-operative and municipal agencies or by local co-operatives and municipal agencies acting alone. The total purchase price aggregated \$110,343,501, of which somewhat less than half represented property purchased by the Authority.¹⁵⁷

The Authority has taken the initiative in conducting negotiations for the acquisition of properties. The basis for negotiation has been the original cost of the property less accrued depreciation, but in many instances the final payment has been more than that sum. It has been a stated policy to give full protection to the actual prudent investment in the properties acquired, and this policy has been said to have been complied with when the purchase prices have sufficed to retire bonds and preferred stock at their face value with the provision of substantial balances for the common stockholders.¹⁵⁸

The Authority, in promoting the fullest possible utilization of power in rural districts, has even been authorized to construct transmission lines to farms and small villages that would not otherwise be served, and to distribute electric power directly to the consumer.¹⁵⁹

Sales to industrial consumers. The Authority is permitted to contract for the sale of power to industrial consumers as a means of improving its load and obtaining added revenue. However, such contracts must contain a provision permitting the contract to be canceled upon five years' notice, if the power is needed to meet the requirements of states, counties, or municipalities.¹⁶⁰ A large proportion of the power sold to such industrial consumers consists of secondary or interruptible power which cannot be used by municipal and co-operative purchasers.

Sales to utility companies. Where it sells to private power companies for resale to ultimate consumers, the Authority is instructed to require the private corporation to agree that the prices to consumers shall not be in excess of those

¹⁵⁴ *Ibid.*, Sec. 12.

¹⁵⁵ *Annual Report, 1939*, p. 49.

¹⁵⁶ *Tennessee Valley Authority Act*, Sec. 12 (a).

¹⁵⁷ *Annual Report, 1939*, pp. 50-51; *1940*, pp. 20, 86-87.

¹⁵⁸ *Annual Report, 1939*, pp. 50-55; *1940*, p. 21.

¹⁵⁹ *Tennessee Valley Authority Act*, Sec. 10.

¹⁶⁰ *Ibid.*, Sec. 10.

fixed by the board as reasonable, just, and fair.¹⁶¹ Sales to private corporations have consisted largely of secondary and dump power that would not be otherwise marketable. The Authority has also negotiated arrangements for the interchange of power with adjacent power companies. These contracts have not contained any provisions as to prices to be charged to consumers.¹⁶²

For the year ending June 30, 1939, the Authority was selling to six classes of customers. (See Table 59.) It sold 3,629,676,604 kilowatt-hours of energy,

TABLE 59 *

DISTRIBUTION OF ENERGY AND REVENUES RECEIVED BY THE TENNESSEE VALLEY AUTHORITY YEAR ENDED JUNE 30, 1940

	Total energy sold		Total revenue		Average rate per kwh (mills)
	Kwh	Per cent	Amount	Per cent	
74 Public agencies (municipal and county)	1,539,562,968	42.4	\$6,678,120.60	44.1	4.34
32 Co-operatives	141,930,193	3.9	836,335.83	5.5	5.89
7 Industrials	1,169,057,645	32.2	4,339,303.96	28.7	3.71
17 Private Utility Companies	523,232,414	14.4	2,182,465.09	14.5	4.17
Temporary rural service (12 districts)	27,565,938	0.8	396,057.72	2.6	14.37
Interdepartmental sales	228,327,446	6.3	693,096.76	4.6	3.04
Total Sales	3,629,676,604	100.0	\$15,125,379.96	100.0	4.17

* Source: *Annual Report, 1940*, pp. 90-92.

and collected a total revenue of \$15,125,379.96. The average rate, in mills, was 4.17. The preferred customers, the seventy-four municipalities and thirty-two co-operatives, took approximately 1,680,000,000 kilowatt-hours and provided revenue approximating \$7,514,000. The seven industrials, taking largely secondary and interruptible power not suitable for use by municipal and co-operative units, received over 1,169,000,000 kilowatt-hours and provided almost 30 per cent of the total revenue. The remaining sales were to utility companies, to consumers in twelve districts where temporary rural service was provided directly, and to departments within the organization.

In the year 1939, the Authority's power operations were reported to be on a paying basis. The power revenues yielded a net income of more than \$1,478,000 after all expenses, including direct power expenses and allocated expenses incurred jointly in the operation of the multiple-purpose dams for navigation, flood control, and power. Depreciation, calculated at 2.1 per cent of the electric property on a straight-line basis, amounted to \$1,736,000 and was deducted prior to determination of net income. Furthermore, the net income for 1939 was sufficient to balance all losses previously sustained in power operations

¹⁶¹ *Ibid.*, Sec. 12.

¹⁶² The sales to electric utilities have been chiefly to the Arkansas Power and Light Company, Commonwealth and Southern Corporation, and the Alabama Power Company. Provisions as to resale rates appear only in the contract with the Arkansas Power and Light Company.

and to leave a margin of \$900,000 as the net income for the five-year period.¹⁶³ For the year 1940 (i.e., ending June 30, 1940), the total revenues from the power program amounted to \$15,285,073.54 and provided a net income from the power program of \$4,299,229.43.¹⁶⁴

Retail distribution. (1) *General characteristics of contracts with municipalities and co-operatives.* All of the contracts with municipalities and co-operatives are for twenty years. The contract sets forth the wholesale rates at which the Authority will sell power and also stipulates the rates which the retail distributor shall charge to various classes of consumers. It is provided that the Authority and the municipality or co-operative shall agree upon such changes in rates as may be necessary to maintain the distributing system on a self-supporting and financially sound basis.

(2) *The wholesale rates.* The wholesale power rate schedule (Schedule A-1) is available to states, counties, municipalities, and co-operative organizations. The schedule is a two-part rate with a demand charge of ninety cents per kilowatt of demand per month and an energy charge varying from 4 mills to 2 mills per kilowatt-hour.

WHOLESALE POWER RATE Schedule A-1

Demand Charge—

\$0.90 per kilowatt per month

Demand, maximum integrated 60-minute period.

Energy Charge

*Mills per
kwh*

First 100,000 kwh per month

4

Next 200,000 kwh per month

3

Next 700,000 kwh per month

2.5

Over 1,000,000 kwh per month

2

A reduction of one-half mill per kilowatt-hour is made for energy exceeding 360 times the measured demand, and in order to protect the revenues of the distributors, the schedules provide a maximum energy charge of 2 mills for any energy that is resold at 4 mills to residential consumers. The demand charge constitutes the minimum monthly bill.¹⁶⁵

The municipalities and co-operatives purchased power from the Authority at an average cost of 0.449 cent per kilowatt-hour for the year ending June 30, 1940; with an allowance for line losses, the cost of power actually sold was 0.498 cent per kilowatt-hour. The cost of purchased power was the largest single item of expense for the retail distributors, amounting to 48 per cent of their total operating expenses.¹⁶⁶

(3) *Retail rates.* Contracts with municipalities and co-operatives provide for the use of certain standard rates for different categories of consumers.¹⁶⁷

¹⁶³ *Annual Report, 1939*, pp. 58-59.

¹⁶⁴ *Annual Report, 1940*, pp. 55-56.

¹⁶⁵ The demand charge assumes a power factor of 85 per cent, and adjustments in the charge may be made for lower power factors.

¹⁶⁶ Tennessee Valley Authority, *Municipalities and Co-operatives, Financial Statements for the Fiscal Year Ending June 30, 1940*, pp. 3-4.

¹⁶⁷ For the full schedule, see one of the contracts with a municipality, for example, the City of Athens, Tennessee. (*Annual Report, 1939*, pp. 163-177.)

The standard residential rate is a block form with an initial rate of 3 cents per kilowatt-hour, the rate declining until it averages 0.75 cent per kilowatt-hour for consumptions of 1,400 kilowatt-hours and more per month.

STANDARD RESIDENTIAL RATE

Schedule B-1

First	50 kwh per month	3 cents per kwh
Next	150 kwh per month	2 cents per kwh
Next	200 kwh per month	1 cent per kwh
Next	1,000 kwh per month	0.4 cent per kwh
Over	1,400 kwh per month	0.75 cent per kwh

Minimum monthly bill, 75 cents per meter

For the year ending June 30, 1940, the average revenue from residential consumers of the retail distributors was 2.14 cents per kilowatt-hour, the low being 1.45 for the Alcorn County Electric Power Association and the high, 4.03 for the Central Electric Power Association.¹⁶⁸ The average annual residential consumption was 1,331 kilowatt-hours, in comparison with the national average of 925 kilowatt-hours for the twelve months ending June 30, 1940.

The typical contract with distributors provides also for a standard schedule for basic small lighting and power rates (Schedule B-2), basic large lighting and power rates (Schedule B-3) and standard street-lighting rates (Schedule B-5).

In order to aid the newly established municipal electric departments and co-operatives through the developmental period, the Authority permits the retail distributor to impose a surcharge, but all revenues not required for the normal appropriations must be applied to the reduction or elimination of these surcharges.

Contracts with private utility companies for the wholesale supply of power have been rare. One such contract contained a condition requiring the company to adhere to the standard retail schedules prescribed for municipal electric departments and co-operatives. However, the company was permitted to add to all billings for electric energy sold under certain designated rate schedules a charge of 1 cent per kilowatt-hour for the first 100 kilowatt-hours used per month, the charge to be not less than 25 cents nor more than \$1 per billing per month. This surcharge is in addition to that permitted under all schedules where adherence to the prescribed rates proved incompatible with maintaining the financial soundness of the utility.¹⁶⁹

(4) *Financial and accounting policies.* All contracts stipulate that the municipal electric department shall be separate and distinct from other municipal activities, with separate accounting for all utility funds. The municipality's plant is further required to keep accounts according to the system prescribed by the Authority and to furnish operating and financial statements covering the operations of its electric system.¹⁷⁰

¹⁶⁸ *Annual Report, 1940*, p. 96 (facing).

¹⁶⁹ Contract between Tennessee Valley Authority and Bells Light and Water Company. (*Annual Report, 1939*, p. 178.)

¹⁷⁰ The accounting system prescribed by the Federal Power Commission has been adopted.

The contracts list the precise order in which the gross revenues from electric operations shall be applied:

"(1) Revenues shall first be used for the payment of all current operating expenses including salaries, wages, cost of materials and supplies, power at wholesale, and insurance.

"(2) From remaining revenues municipality shall next currently provide for the payment at maturity of interest accrued on all system indebtedness, and for amortization charges and/or sinking fund payments thereon.

"(3) Thereafter revenues shall be used currently to set up reasonable reserves for replacements, new construction, and for contingencies, and to provide a reasonable amount of cash working capital.

"(4) From remaining revenues municipality may thereafter pay into its general fund a return on its investment and a tax equivalent as provided in the financial and accounting policy in the schedule of terms and conditions of contracts attached hereto.

"(5) All remaining revenues shall be considered surplus revenues and may be devoted by municipality to the purchase or retirement of system indebtedness before maturity and if not so devoted shall serve as a basis for reduction or elimination of surcharges to consumers and thereafter for the reduction of rates. Surplus revenues shall be computed as of June 30 of each year." ¹⁷¹

The municipality's investment is defined in terms of the actual historical cost, less any outstanding obligations that have been incurred in behalf of the electric system. The investment of the municipality may be increased only by the investment of municipal funds other than the funds of the electric system, or by leaving with the electric system a part of the return to which the municipality is entitled. Any withdrawal of funds by the municipality in excess of the stipulated return on the investment and the payments due as tax equivalents results in a proportional reduction of the municipality's investment. On the investment as thus defined, the municipality is entitled to a maximum return not in excess of one-half of one per cent per month.

The contracts permit the municipalities to collect from the electric department certain payments in lieu of taxes. First, the municipality may collect a sum equivalent to the municipal general property tax, by applying the regular property-tax rate to the value of the property used in electric operations within the municipality. Secondly, if the counties and state governments are not levying property taxes upon the electric system, the municipality may impose a tax equivalent to the county and state taxes.

In keeping with the principle that the electric system should be a separate department, provision is made for the payment by the electric department for all services received from the municipality. The electric department must pay the salaries of all persons who devote their full time to its affairs and an equitable portion of the salaries of those who devote part-time to the operation of the utility system. Conversely, the municipality is required to pay into its electric funds from the municipal funds for all electric service rendered to the municipality for street lighting, water pumping, and other uses, at the rates set forth in the schedule applicable to such service.

¹⁷¹ *Annual Report, 1939*, pp. 164-165.

The co-operatives' contracts stipulate special amortization charges. These charges are at the rate of 1 cent per kilowatt-hour for the first 100 kilowatt-hours per month per consumer, the charge to be not less than 25 cents nor more than \$1 per billing per month. These charges continue until all notes, bonds, and other outstanding indebtedness have been fully paid and discharged.

(5) *Rules and regulations.* The contracts contain a schedule of the rules and regulations which the municipal electric department or the co-operative shall observe in their relations with consumers. These rules and regulations govern such matters as billing, the testing of meters, the refusal or discontinuance of service, the requirement of deposits, et cetera.

(6) *Operating results.* As of June 30, 1940, the Authority was serving seventy-four municipal electric departments and thirty-two co-operatives. These distribution systems sold approximately 1,500,000,000 kilowatt-hours of energy and earned a gross revenue of \$21,624,000, and net income of \$4,023,000. Four large metropolitan areas—Chattanooga, Knoxville, Memphis, and Nashville—accounted for 63 per cent of the gross revenues and 68 per cent of the net income. The remaining seventy municipalities received 25 per cent of the gross revenues, and had net earnings of \$1,160,000, or 29 per cent of the combined net income. Six of the municipalities, which were still in the developmental stage or were operating under competitive conditions, sustained a combined net loss of \$18,000 for the year. The power co-operatives, most of them bringing original service to areas primarily rural, developed less rapidly: seventeen co-operatives earned a net income of \$261,000; while fifteen had a combined net loss of \$149,000. Eleven of the fifteen co-operatives had been in operation for less than three years and so were still in the developmental stage.¹⁷²

TABLE 60 *

ESTIMATED ANNUAL CONSUMER SAVINGS FROM TENNESSEE VALLEY AUTHORITY'S RATES FOR THE YEAR ENDING JUNE 30, 1940

<i>Distributors</i>	<i>Residential</i>	<i>Lighting and Power</i>		<i>Street Lighting</i>	<i>Total</i>
		<i>Small</i>	<i>Large</i>		
Municipalities	\$2,929,761	\$2,938,665	\$2,132,914	\$212,060	\$8,213,400
Co-operatives	344,691	253,605	131,469	18,638	748,403
Private companies	11,388	8,566	5,456	1,621	27,031
T.V.A. direct	32,854	23,421	102,899	^a	159,174
Total	\$3,318,694	\$3,224,257	\$2,372,738	\$232,319	\$9,148,008

* Source: *Annual Report, 1940*, p. 97.

^a Data not available.

The Authority's rates have brought substantial savings to all classes of consumers. The annual savings for the year ended June 30, 1940, as summarized in the Table 60, totaled \$9,148,008. The estimates are for areas receiving power on August 1, 1940, and are based on the actual sales for the year prior to the initial establishment of the Authority's rates or the best available information

¹⁷² Tennessee Valley Authority, *Municipalities and Co-operatives, Financial Statements for the Fiscal Year Ended June 30, 1940*.

where those data are unavailable. Even greater savings are in prospect as the public and co-operative distributors build up larger loads and amortize their outstanding obligations. Already some distributors have reduced their rates below those established in the original contracts.¹⁷³

Criticisms of the Tennessee Valley Authority. The program was enacted and has developed amidst controversy. It is impossible to present and assay all of the criticisms, but in essence they relate to six points: the soundness of the program, the competition with private business, the Authority's charges as a yardstick for rates of private companies, the loss of tax revenues through the expansion of public ownership, the acquisitions of utility properties, and interference with state regulations.

(1) The soundness of the program. The soundness of the various aspects of the program has been questioned. It has been said that the development of water transportation on the Tennessee River was unjustified; that an adequate system of flood control could be provided at a smaller cost; and that the power program would result in the creation of more capacity than was required to meet the demands of the region. The justification for flood control, navigation improvement, and conservation work lies beyond the proper scope of the present discussion; however, it may be noted that public opinion is now generally agreed that this flood-control and conservation work has been too long delayed and has become indispensable to the future welfare of the country. While present transportation facilities may be adequate to meet the full requirements of the Tennessee Valley, the provision of waterway improvements may still be justifiable in providing a less expensive form of transportation for traffic which would otherwise not move, and in anticipating the future transportation requirements of a rehabilitated Tennessee Valley. Finally, it should be remarked that all of the present generating capacity of the region, both that of the private utilities and that of the Authority, is utilized and there is still a demand for more power.

The power program has been subordinated to the requirements of navigation and flood control. The size, character, and location of the dams were determined primarily to meet the requirements of river management. If the production of power were the sole purpose, the dams would have been differently designed and differently located. Furthermore, even in the operation of the dams and the regulation of water flow, first consideration must be given to navigation requirements and flood control. Only the future can give a conclusive answer as to whether the investment has been justified, but it now appears, according to the majority report of the Congressional investigating committee, that the power revenues will suffice to cover all costs charged to the power investments and in addition will help to liquidate the costs of other features of the development.

(2) Competition with private business. It is charged that the Tennessee Valley Authority has brought unfair government competition into the utility field and has displaced private enterprise that was satisfactorily serving the Valley. This charge is substantially correct, if it refers simply to the fact that the rendition of electric service throughout most of the Tennessee Valley has

¹⁷³ *Annual Report, 1940*, p. 27.

been transferred from private corporations to public agencies and co-operative enterprises. Municipal and co-operative electric units have developed in part as a result of the low wholesale rates available, and in part from the fact that municipalities have been able to negotiate loans at low interest rates (and even in some instances to receive outright grants) for the purchase or construction of municipal plants, while rural co-operatives have received large loans from the Rural Electrification Administration. In the disposal of its power, the Authority is required to give priority to the demands of public and nonprofit distributing agencies. At present, the Authority has acquired all of the distribution territory it can satisfactorily serve, so presumably the further invasion of the private utilities' markets is at an end.

It has not been the policy of the Tennessee Valley Authority to undertake construction that duplicates existing facilities; it has been the objective of the Authority and of most municipalities in the area to acquire the existing facilities of the private companies on mutually satisfactory terms. Also, it should be noted that service has been brought to new areas that the private utilities were unprepared to supply, particularly to rural territory which was too thin to attract private capital. The more intensive development of the urban market, particularly among domestic consumers, has been a consequence of the low rates. Such direct competition with private utilities as has developed has resulted from the inability of the municipality to negotiate a purchase of the local facilities of the private company.

(3) The yardstick. The program has been widely publicized as a yardstick by which to measure the reasonableness of the rates charged by private utilities. The theory of the yardstick was not new; experience with public competition in this country, as well as the Ontario Hydro-Electric Commission in Canada, had shown that publicly owned electric systems, particularly when on an interconnected basis, were able to make progressive rate reductions without jeopardizing their solvency, and that their example was often more successful than regulation in inducing private companies to make similar rate reductions. It was also contemplated that the demonstration by the public project of the promotional effects of rate reductions would encourage private managements to make reductions in the hope of building up more stable and profitable businesses.

Critics have attacked the yardstick on three grounds: that the wholesale rates charged by the Authority to the distributing units do not accurately reflect all the costs of generating the power; that the retail rates involve a concealed subsidy; and finally, that the accounts of the municipalities and the Authority do not reflect all of the costs that would be incurred by a private company rendering the same service.

Certain misconceptions have arisen with respect to the yardstick idea. It was neither the intent nor the proper function of the program to establish a yardstick to cover precisely all of the costs that would be incurred by a private company; rather, its function was to establish a public rate yardstick, that is, one that would be economically sound in terms of an efficiently conducted and publicly owned enterprise. There are significant differences between publicly owned and privately owned utility enterprises and no useful purpose is served

if these distinctions are blurred and ignored; while it is important to know accurately the costs at which privately owned and operated utilities can render service, it is equally important to know accurately what costs are involved when the same service is rendered by the publicly owned enterprise or by a co-operative undertaking.

To express even tentative conclusions with respect to the criticisms of the yardsticks, it is necessary to enter upon an analysis of the allocation of the investment costs and the accuracy of the accounting for operating expenses, both for the Authority and its retail distributors. The propriety of the allocation of investment costs could not be determined by a simple appeal to facts, even if the program had reached maturity and all costs had been incurred.

The Authority's allocation for the first three dams completed, an allocation approved by the President and subsequently used as a basis for determining costs and rates, was—navigation, 20 per cent, flood control, 28 per cent, and power development, 52 per cent. Clearly, some allocation of capital costs is both necessary and appropriate, since neither the construction of the dams nor their operation is solely for power production. Wherever joint costs are encountered, the allocation of these costs among the different purposes for which the investment has been incurred must always involve an arbitrary judgment, arbitrary in the sense that there are no objective facts which supply the answer without elements of interpretative judgment. The question of the allocation of costs was a subject of inquiry by the Joint Committee Investigating the Tennessee Valley Authority, but the Committee was not unanimous in its conclusions, the majority finding ample support for allocations approximating those used by the Authority, while the minority dissented sharply.¹⁷⁴

Even though unanimity is not possible with respect to the allocation of capital costs, it is possible to arrive at a judgment of the reasonableness of the wholesale rates. For the year ending June 30, 1939, the average rate per kilowatt-hour charged to the municipalities purchasing power was 4.85 mills, while the average rate to co-operatives was 5.95 mills. These rates were not very different from those charged by private companies supplying wholesale power to distributing companies. The Authority is not substantially underselling private companies in the wholesale field, at least not by more than one or two mills, and this difference would not be sufficient to account for the lower retail rates which the distributors charge to consumers.¹⁷⁵ Whether the Authority's accounting makes accurate allowance for such costs as interest, both on outstanding obligations and for interest during construction, depreciation, taxes, et cetera, has been debated; the majority report of the Congressional Investigating Committee found that the wholesale revenues would

¹⁷⁴ *Report of the Joint Committee Investigating the Tennessee Valley Authority*, pp. 153, 166, and 294-303.

¹⁷⁵ Under the wholesale schedule, the price paid by municipalities and co-operatives is a combination of demand and energy rates, and averages 6.54 mills per kilowatt-hour for a distributor with a 750 kilowatt peak demand (small co-operatives), 6.01 mills per kilowatt-hour for a 2,500 kilowatt peak demand (small community), and 5.21 mills per kilowatt-hour for 20,000 kilowatt peak demand (large community). Many private utilities have wholesale contracts specifying lower rates.

be more than adequate to cover all costs attributable to power, including interest, amortization, and replacements, and still leave, when the system was fully developed, some balance of revenues to pay part of the costs of the navigation and flood-control programs.¹⁷⁶ To conclude, it may be noted that to test the reasonableness of the rates charged by private companies there is no necessity for any yardstick with respect to the wholesale costs, since the costs of generation of power are quite standardized and can be quite accurately determined for any particular plant. The justification for the program is not to be found in the creation of a standard for judging wholesale rates.

The real need for a yardstick is in retail rates, for the differences in charges between companies are usually defended by reciting the alleged differences in distribution costs or variations attributable to differences in the average per capita consumption of power. The rates charged by the retail distributors have been sufficient to cover operating costs, to make provision for replacement, and to provide for amortization. The municipal electric departments are required to pay for all services which they receive from municipal officials. Provision is made for the payment of a return on the equity which the municipality has in its electric department, and payments of tax equivalents are made in those states where public and co-operative electric companies are not exempt from taxation. The distribution operating expenses and the capital investment in distribution systems for the retail system are substantially in line with the similar costs of private companies. Furthermore, the operating records of established municipal plants and co-operatives indicate that these resale rates are economically sound.

It has been asserted that a subsidy is involved in the Tennessee Valley Authority's promotional work to encourage increased consumption, but these expenditures would also constitute a subsidy to private companies if their rates were sufficiently low to encourage increased consumption. The costs of the services performed for the retail distributors by its staff are recovered in the wholesale rates charged by the Authority.¹⁷⁷ If any significant subsidy exists, it is to be found in grants by the Public Works Administration in aid of the construction or acquisition of municipal systems. Fortunately, there is no concealment about such grants; they are a part of the public record; and in any final appraisal of the success of the municipal distributors, the capital costs represented by such grants must be recognized.

In conclusion, then, the yardstick idea has been misunderstood. The yardstick is not to be found in the wholesale rates, since presumably the costs of wholesale generation are peculiar to these projects and would not be duplicated if power were produced by steam, or by another and different hydro-electric development. The retail rates charged by the distributors are substantially less than those previously charged by private companies. Yet even the retail rates are not a yardstick in the sense that they indicate precisely what rates would be fair and proper for a private company. Rather, the rates and

¹⁷⁶ *Report of the Joint Committee Investigating the Tennessee Valley Authority*, pp. 250-252.

¹⁷⁷ See *Majority Report of the Joint Committee Investigating the Tennessee Valley Authority*, pp. 190-198. Also; *Economic Analysis of the Tennessee Valley Authority Power Yardstick*, by Leland Olds, Executive Secretary of the Power Authority of the State of New York, *Ibid.*, Appendix A, pp. 197-234.

the costs of the distributors afford some indication of the reasonable unit costs (both capital and operating costs), and of the promotional effect of low rates upon per capita power consumption.

(4) The loss of tax revenues. Criticism of the Authority has stressed that neither it nor those distributing its power are paying taxes comparable to those paid by private companies. It is asserted that the municipalities, counties, and states have suffered a substantial loss of revenue. The implications of this criticism are that the Act is responsible for the loss of revenue and that there is no alternative but to raise the necessary tax revenue from other sources.

The fact is that the program constitutes no obstacle to the taxation of the municipal electric departments and co-operatives; indeed, provision is made for such tax payments in the contracts between the Authority and its retail distributors. Where the state and county are not taxing municipal systems, the municipality itself is permitted to take, in addition to the regular property tax on the value of the electric department's property within the municipality, the sum that would be collected in state and county taxes if such were imposed. Furthermore, the Authority is required to pay 5 per cent of the gross proceeds from the sale of power generated in Alabama to the state of Alabama, and a similar percentage on the gross proceeds from the sale of power generated at any dam in Tennessee to that state.¹⁷⁸ Under these circumstances, if the transfer of electric service from private utilities to public agencies and nonprofit co-operatives has resulted in diminution in tax revenues, that is the deliberate choice of the states, which could, if they chose, assess taxes on the public and co-operative systems.¹⁷⁹

(5) The acquisitions of utilities' properties by the Tennessee Valley Authority and the municipalities. Bitter charges of coercion and conspiracy have arisen in connection with the acquisition of properties from private utilities. Specifically, it has been said that under the threat of federal loans and grants to municipalities to build competing systems, the power companies have been forced to sell at less than a fair price. It has been noted that it was the policy of the Authority to avoid wasteful duplication of transmission and distribution facilities, to negotiate the purchase of such facilities at prices at least equivalent to the actual prudent investment therein, and that the acquisitions have been at prices which have in fact served to protect the actual legitimate investment, in most instances permitting the payment of bonds and preferred stocks at their face value and leaving a substantial margin for common stockholders.

The charges of coercion and intimidation were brought forward in the *Eighteen-Power-Companies* case. Both the district court that tried the case, and the Supreme Court in reviewing the lower court's decision, were unable to find any basis for the alleged coercion or conspiracy.¹⁸⁰

(6) Interference with state regulation. It has been charged that the Ten-

¹⁷⁸ *Tennessee Valley Authority Act*, Sec. 13. With the approval of the President, these tax percentages are subject to revision and change by the board of directors.

¹⁷⁹ It has been suggested that in determining the loss of tax revenues, allowance should be made for the significant savings in the costs of electric energy purchased by municipalities and other political units.

¹⁸⁰ *Tennessee Electric Power Co. v. T.V.A.*, 306 U.S. 118, 145 (1939).

nessee Valley program constitutes an invasion of the powers of the states and interferes with their regulation of local utilities. This charge is based upon the fact that the Authority is a federal instrumentality and hence not subject to state regulation, and on the further fact that the contracts with retail distributors specify the rates which shall be charged and the applications which shall be made of their gross revenues. In weighing this charge, it should be noted that only the Authority itself is a federal instrumentality and that the retail distributors, whether municipal departments or power co-operatives, are creatures of the states in which they operate. All of these states—Alabama, Tennessee, Kentucky, and Mississippi—have enacted legislation to facilitate the Authority's operations within their respective states; all permit municipalities to establish and operate electric power plants; all allow the organization of nonprofit electric co-operatives, and permit these public agencies and co-operatives to contract with the Authority as to the resale rates that shall be charged consumers.¹⁸¹ The need for state regulation is much diminished, if not nonexistent, where service is supplied by municipalities or co-operative organizations at cost under the supervision of the Authority. It is difficult to see in these contracts any possible source of injury either to consumers or to the community at large. Moreover, there is nothing to prevent the states, if they deem it advisable, from undertaking supervision of the retail distributors.

THE COLUMBIA RIVER AND THE BONNEVILLE POWER ADMINISTRATION. The Columbia River and its tributaries are potentially the greatest system of low-cost hydroelectric power in the United States. As a part of a comprehensive investigation of navigable streams and their tributaries, the Corps of Engineers of the United States Army reported to Congress, on March 29, 1932, a plan for the unified development of the Columbia River for purposes of navigation, flood control, irrigation, and water power.¹⁸² The report proposed a series of ten dams from the Canadian border to tidewater, located as follows: Grand Coulee, Foster Creek, Chelan, Rocky Reach, Rock Island, Priest Rapids, Umatilla Rapids, John Day Rapids, The Dalles, and Bonneville. The Bonneville Dam, the first to be constructed, was started in September, 1933, and the first section of the power house, including two of the ten generating units, was completed in 1938. The construction was done by army engineers.¹⁸³ The first two generating units gave the Bonneville plant a capacity of 86,400 kilowatts; with the installation of the final generating units, its estimated capacity will be 518,400 kilowatts, to be reached presumably in July, 1944.¹⁸⁴ The Grand Coulee Dam is in process of construction by the Bureau of Reclamation, with the installation of the first generating unit scheduled for August, 1941, the ultimate generating capacity at Grand Coulee being estimated at 1,944,000 kilowatts.¹⁸⁵ The Bonneville Dam depends upon the flow

¹⁸¹ Alabama, *Acts, Regular Session 1935*, No. 1, 45, 155; Tennessee, *Public Acts, 1935*, C. 32, p. 28, C. 37, p. 78, C. 42, p. 98, *Public Acts, 1937*, C. 231, p. 882. Kentucky, *Carroll's Kentucky Statutes (1936)*, Sec. 3480 d-1 to 3480 d-22; *Fourth Extraordinary Session, 1936-1937*, C. 6, p. 25; Mississippi, *Laws, 1936*, C. 183, p. 334; C. 184, p. 342; C. 185, p. 354; C. 187, p. 370; C. 271, p. 531.

¹⁸² 73 C., 1 s., House doc. No. 103.

¹⁸³ 1 *Ann. Rep. Bonneville Power Administration*, 2, 5 (1939).

¹⁸⁴ 2 *Ann. Rep. Bonneville Power Administration*, 17 (1939).

¹⁸⁵ *Moody's Public Utilities, 1940*, p. a28.

of the river for the generation of its power, while the Grand Coulee Dam is a storage dam. The combination of the two will have the effect of making the ratio of firm power to installed capacity very high. The ultimate combined capacity of Bonneville and Grand Coulee is estimated to be 2,462,400 kilowatts, which will exceed the aggregate installed capacity of the states of Oregon and Washington which, as of December 31, 1939, was 1,464,506 kilowatts, 73 per cent being hydroelectric capacity.¹⁸⁶

Bonneville Power Administration. The Bonneville Dam is maintained and operated under the direction of the Secretary of War and the Chief of Engineers.¹⁸⁷ The Grand Coulee Dam is operated by the Bureau of Reclamation. By an Act approved August 20, 1937, there was established the Bonneville Power Administration with the function of marketing all electric energy generated at the Bonneville project and not required for the operation of the navigation facilities.¹⁸⁸ And by an Executive Order dated August 26th, 1940, the Bonneville Power Administrator was designated as the agent to construct and maintain transmission lines from Bonneville to the Grand Coulee Dam and to market the power delivered from the Grand Coulee project.

The Bonneville Project Act of 1937 was a provisional measure pending the establishment of a permanent administration for Bonneville and the other projects in the Columbia River Basin. The administrator, who exercises all of the power under the Act, is appointed by the Secretary of Interior and, in all except extraordinary matters, exercises full authority over the marketing of electric power from Bonneville and Grand Coulee.¹⁸⁹ As with other federal agencies selling electric power, preference and priority is given to public bodies and co-operatives in the distribution and marketing of Bonneville power. The Administrator possesses authority to construct and maintain transmission lines and substations and other facilities for the marketing of power, and is permitted to acquire any necessary property by purchase or condemnation.¹⁹⁰ The Administrator may make wholesale contracts for the delivery

¹⁸⁶ Federal Power Commission, *Supplement to Electric Power Statistics, 1939.*

¹⁸⁷ The Bonneville Dam is located on the Columbia River approximately forty miles east of Portland, Oregon. The dam contains the largest single-lift lock in the world, and its completion has made the Columbia River accessible to oceangoing vessels as far as The Dalles, Oregon, 187 miles inland from the Pacific. A twenty-six foot channel is being constructed from Vancouver, Washington, to the Bonneville Dam. Already substantial quantities of wool, wheat, lumber, and gasoline are being shipped up the Columbia River.

¹⁸⁸ 50 Stat. 731.

¹⁸⁹ The Act made provision for an advisory board composed of a representative of the Secretary of War, a representative of the Secretary of Interior, a representative of the Federal Power Commission and a representative of the Secretary of Agriculture. (*Ibid.*, Sec. 2 [a].)

A bill for the establishment of a permanent administration contemplates the creation of the Columbia Power Administration as a regional agency operating under the jurisdiction and control of the Secretary of Interior. (70 C., 3 s. S. 4390.)

¹⁹⁰ *Bonneville Project Act*, Sec. 2 (b) and (c). The proposed legislation would permit the Columbia Power Administration to acquire both transmission lines and substations and any generating and distributing facilities that are so related to the transmission lines as to make it uneconomical or impracticable to acquire such transmission lines without acquiring the rest of the property. One purpose of this amendment is to permit the Administration to acquire privately owned systems in their entirety, thus avoiding not only a needless duplication of negotiations with the same power company by the Columbia Power Administration and by other public bodies or co-operatives that might seek to acquire local distribution facilities, but also the very heavy severance damages that piecemeal acquisitions always entail. Presumably the systems acquired by the Administrator would be broken up into (1) transmission properties, and

of electric energy to public bodies, co-operatives, private companies, and industrial consumers, but all contracts with public utilities must reserve the right of cancellation on five years' notice if the power is needed to meet the requirements of public bodies or co-operatives. And the Administrator is expected to conclude contracts with public and private power systems for the mutual exchange of any excess power and to provide emergency or breakdown service.¹⁹¹

The proposed legislation would authorize the Administrator to issue bonds, notes, and other obligations to an amount not exceeding \$200,000,000 at any one time. Such bonds and notes could not be issued unless the Administrator should have certified (and the Secretary of the Interior approved) that the operation of the properties to be acquired would provide added revenues sufficient to pay the principal and interest on the securities to be issued. The securities would be a direct obligation of the Columbia Power Administrator, but would be fully guaranteed as to principal and interest by the United States. The interest payable on such obligations would be limited to 3.5 per cent.¹⁹²

The market for Bonneville power. Since the ultimate capacity of Bonneville and Grand Coulee is to exceed the generating capacity of the Pacific Northwest at the time the project was inaugurated, it is not surprising that doubts have been expressed as to whether a market can be found for the new power. Thus far, the growth of the market has more than kept up with the scheduled installation of generating capacity; indeed, it has been necessary to accelerate the building of transmission lines both to avoid a waste of Bonneville and Grand Coulee power and to satisfy requirements. For the future, a larger market may result from two developments. First, the growth of the public utility market will presumably be rapid in this potentially rich but relatively undeveloped section of the country. Secondly, the location of new industries, particularly new electro-metallurgical and electrochemical industries, may be expected in the Pacific Northwest, if abundant cheap power is available. Indeed, such industrial developments are almost inevitable, since the three states of Washington, Oregon, and Idaho contain over forty per cent of the undeveloped hydroelectric energy of the United States, and of this amount, more than half lies in the Columbia River system.¹⁹³

The distribution of Bonneville power. The Administrator is expected "to encourage the widest possible use of all electric energy that can be generated and marketed and to provide reasonable outlets" for such power.¹⁹⁴ It has been the policy of the Administrator to plan the development of the transmission system on a regional basis to obtain the full benefits of integration with existing systems and to provide the most economical and effective transmission system, not only for present, but also for the potential, hydroelectric de-

perhaps generating facilities, which would be retained by the Administrator, and (2) distribution facilities, with any generating and transmission facilities of local importance only, which would be sold to public bodies or co-operatives (within six months if possible). (76 C., 3 s., S. 4390.)

¹⁹¹ *Bonneville Project Act*, Sec. 5 (a) and (b).

¹⁹² 76 C., 3 s., S. 4390.

¹⁹³ 2 *Ann. Rep. Bonneville Power Administration* 20.

¹⁹⁴ *Bonneville Project Act*, Sec. 2 (b).

velopments.¹⁹⁵ Furthermore, it is desired that the benefits of Bonneville shall be uniformly available throughout the territory served and it is even suggested that the Administrator "may provide for uniform rates or rates uniform throughout prescribed transmission areas in order to extend the benefits of an integrated transmission system and encourage the equitable distribution of the electric energy developed at the Bonneville project."¹⁹⁶ It is expected that the electric energy will be sold at a price sufficient to recover "the cost of producing and transmitting such electric energy, including the amortization of the capital investment over a reasonable period of years."¹⁹⁷ As with other federal developments, Congress has stipulated that public bodies and non-profit cooperatives shall be preferred in the allocation and sale of electric energy.¹⁹⁸

If Bonneville power is to be available at the lowest possible cost to consumers, it is essential that the distributing agencies operate as economically as possible. This has been the basis for the encouragement given to the development of public utility districts and to bringing electric service to rural communities through the establishment of co-operatives.

Like the Tennessee Valley Authority, the Bonneville Project has elements of regional planning. This is perhaps most evident in the consideration given to the development of the industrial resources of the territory.

Wholesale rates. The Bonneville power administration sells power at wholesale under four rates:

(1) At-site prime power (Schedule A-2) is \$14.50 per kilowatt per year. This schedule is available to purchasers who bring their own transmission lines to the generating station. It will be noted that in contrast to the usual rate forms this schedule sells power, available twenty-four hours a day throughout the year, rather than selling energy at a designated rate per kilowatt-hour.

(2) Transmission-system prime power (Schedule C-2) is \$17.50 per kilowatt per year. This is a uniform rate for power delivered at wholesale anywhere on the Administration's transmission system. These two schedules provide the lowest power rates in the country for any purchaser with a reasonably high load factor, but the cost may not be particularly low for those purchasers having a low load factor. It was this situation which led to the development of Schedule F-1.

(3) Optional prime power (Schedule F-1) is sold under a combined demand and energy charge: 75 cents demand charge per kilowatt per month, plus energy at 2.5 mills per kilowatt-hour. This rate is most advantageous for practically all utilities with less than 45 per cent average annual load factors. Since many of the purchasers of Bonneville power are in the development stage, a large proportion of the contracts call for the delivery of power on Schedule F-1.¹⁹⁹

¹⁹⁵ The plans have sought to protect existing investments in generating and transmission facilities. There exists no basis for a charge of wasteful duplication of transmission facilities when the existing facilities are inadequate to meet the present and potential requirements of the Columbia Power Development.

¹⁹⁶ *Ibid.*, Sec. 6.

¹⁹⁷ *Ibid.*, Sec. 7.

¹⁹⁸ *Ibid.*, Sec. 4.

¹⁹⁹ Purchasers taking power under Schedule F-1 are permitted to shift to Schedule C-2 when-

(4) Dump energy (Schedule H-1) is sold at wholesale at 2.5 mills per kilowatt-hour. It has been the policy of the Administrator not to supply dump energy to be used as a substitute for shortage in either stream flow or stored water, nor will it be sold to enable a utility to dispense with the necessity of providing a reasonable reserve capacity.²⁰⁰

Contracts of the Bonneville Administrator with purchasers. As of August, 1940, the Bonneville Power Administration was making sales to eight municipalities, four public utility districts, one power co-operative, two private utilities, and three industrial purchasers. The contracts with public bodies and co-operatives embodied substantially the same policies and principles that had been developed in the Tennessee Valley Authority contracts with municipalities.

Resale rates. In the first years, the Bonneville Power Administration did not attempt to prescribe fixed resale rates for purchasers of Bonneville power. The negotiation of contracts with public utility districts, and also with municipalities, usually included a discussion of the rates to be charged, and such rates were kept on file at the office of the Administration. The only control retained by the Administrator was to be found in the usual provision that if the city should increase or alter its resale schedules in a manner inconsistent with the general policies and practices applicable to publicly owned electric systems, or if the city should fail to carry out the policy of the Bonneville Act in selling to ultimate consumers at the lowest possible cost consistent with sound economy, then the Administrator could cancel the contract.

As of May 4, 1940, the Administrator announced standard retail rates which were recommended for publicly owned distributing systems purchasing a major part of their power requirements from the Administration. These rates were the same as those that had previously been adopted by several municipalities, and were quite similar in structure and level of charge to those of the Tennessee Valley Authority.²⁰¹

The investment and its amortization. The Bonneville Power Act provided that the Federal Power Commission should allocate the investment costs between power and other uses.²⁰² This allocation of costs is intended to serve as the basis for establishing the wholesale rates for the sale of Bonneville Power and also for accounting purposes. As of December 31, 1937, the project was one-fifth completed, and the total expenditure had been \$53,188,800. It was estimated that the total investment costs would be \$74,144,600.

Of the ultimate cost of the project, \$29,448,000 would be directly allocated to power facilities; \$5,517,600 would be directly allocated to navigation facilities; and the remainder, \$39,179,000, would be joint costs. The Federal Power Commission found that 32.5 per cent of these joint costs should be chargeable

ever their load factor increases to an extent which makes such a change advisable. For the benefit of public bodies and co-operatives purchasing their entire energy requirements from Bonneville, the contracts customarily include a provision, whether power is being purchased under Schedule C-2 or Schedule F-1, to the effect that during a developmental period of two years the average cost of energy will not exceed 5 mills per kilowatt-hour.

²⁰⁰ 2 *Ann Rep. Bonneville Power Administration* 38.

²⁰¹ *Bonneville Power Administration, Release of May 4, 1940.* (N-459).

²⁰² 50 Stat. 731, Sec. 7.

to power. Thus the total investment allocated to power would be \$42,181,000. Since the project would have an ultimate capacity of 504,000 kilowatts, the investment cost per kilowatt of capacity would be \$83.67. As of December 31, 1937, the project was one-fifth complete; hence, 6.5 per cent (one-fifth of 32.5

TABLE 61 *
ALLOCATION OF COSTS FOR BONNEVILLE PROJECT

	<i>Initial</i> <i>project</i>	<i>Power Allocation</i>	
		<i>Per cent</i>	<i>Amount</i>
Power	\$ 9,180,500	100	\$ 9,180,500
Joint	38,490,700	6.5	2,501,900
Navigation	5,517,600		
	<u>\$53,188,800</u>		<u>\$11,682,400</u>

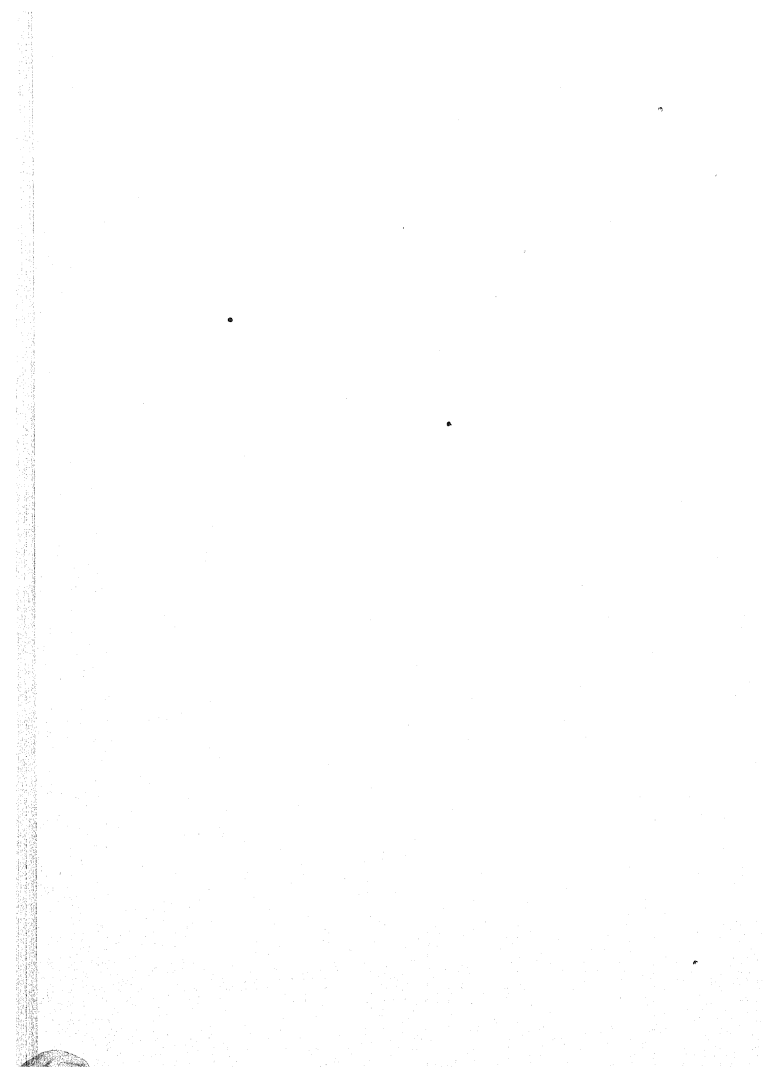
	<i>Ultimate</i> <i>project</i>	<i>Power Allocation</i>	
		<i>Per cent</i>	<i>Amount</i>
Power	\$29,448,000	100	\$29,448,000
Joint	39,179,000	32.5	12,733,000
Navigation	5,517,600		
	<u>\$74,144,600</u>		<u>\$42,181,000</u>

* Source: *Re Bonneville Project*, 1 F.P.C. 706 (1938).

per cent) of the joint costs for initial project, \$38,490,700, or \$2,501,900, was allocated to power, making the total power investment for the initial project \$11,682,400, or \$135 per kilowatt of capacity. These figures do not include an estimated investment of \$30,000,000 for transmission lines.

Will the revenues from the sale of Bonneville power be adequate to meet operating expenses and capital charges and accomplish the amortization of the investment in power facilities? For the fiscal year ending June 30, 1941, the net revenue available for fixed charges and surplus was estimated at approximately \$1,115,000, but with the completion of all generating units and the creation of a regional transmission system it is anticipated that the present wholesale rates will provide annual revenues averaging \$9,350,000, affording a balance after deducting expenses of \$7,459,549. On the basis of these feasibility studies and predictions, the government would recover the full investment allocated to power production with interest at 3.5 per cent in a period of 15 years.²⁰³

²⁰³ 2 *Ann. Rep. Bonneville Power Administration* 38-40.



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